

**BY ORDER OF THE COMMANDER
35TH FIGHTER WING**

**35TH FIGHTER WING INSTRUCTION
15-101**



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Weather

**35TH FIGHTER WING
WEATHER SUPPORT**

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Air Force Weather Operations*, AFI 15-114, *Functional Resource and Weather Technical Performance Evaluation*, Air Force Manual (AFMAN) 15-111, *Surface Weather Observations*, AFMAN 15-124, *Meteorological Codes*, AFI 15-128, *Air Force Weather Roles and Responsibilities*, and AFMAN 15-129V1, *Air and Space Weather Operations – Characterization* and AFMAN 15-129V2, *Air and Space Weather Operations – Exploitation*. This instruction provides policy and procedural guidance for the functions of weather support provided by the 35th Operations Support Squadron Weather Flight (35 OSS/OSW) to Misawa AB. It establishes responsibilities and weather support procedures. It provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather supported services and dissemination of information and reciprocal support. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) *Records Disposition Schedule (RDS)*. Additionally, if the publication generates a report(s), alert readers in a statement and cite all applicable Reports Control Numbers in accordance with AFI 33-324. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional's chain of command.

SUMMARY OF CHANGES

This document has been substantially revised, reformatted and must be completely reviewed. Major changes to the previous Weather Support Document (WSD) of 2012 have been made to the entire document. Erroneous and extra information from the previous document have been deleted.

| | |
|--|-----------|
| Chapter 1— GENERAL INFORMATION | 7 |
| 1.1. General..... | 7 |
| 1.2. Background..... | 7 |
| 1.3. Responsibilities..... | 7 |
| 1.4. Duty Priorities..... | 8 |
| Table 1.1. 17 OWS Duty Priorities..... | 9 |
| Table 1.2. 35 OSS/OSW Duty Priorities..... | 9 |
| 1.5. Operational Hours..... | 10 |
| 1.6. Assumptions, Shortfalls, and Limitations..... | 10 |
| 1.7. Weather Equipment and Technical Assistance..... | 10 |
| Table 1.3. Meteorological Equipment..... | 11 |
| 1.8. Alternate Operating Location (AOL)..... | 12 |
| 1.9. Release of Weather Information to Non-DoD Agencies and Individuals..... | 12 |
| 1.10. Post – Mission Analysis / Feedback. | 12 |
| 1.11. Mishap Procedures..... | 12 |
| Chapter 2— MISSION INFORMATION | 13 |
| 2.1. General..... | 13 |
| 2.2. Supported Organization/Missions/Requirements. | 13 |
| Table 2.1. Misawa Air Base Agency/Mission/Requirement Listing. | 13 |
| 2.3. Geographic Area of Responsibility..... | 13 |
| Figure 2.1. Training and Restricted Areas Surrounding Misawa Air Base..... | 13 |
| Figure 2.2. Gaicho Training Areas..... | 14 |
| 2.4. Airframe-Specific Weather Limitations. | 14 |
| Table 2.2. Weather Limitations. | 14 |

| | | | |
|-------------------|-------|---|-----------|
| Table | 2.3. | F-16 Program's Sensitivities..... | 14 |
| | 2.5. | Training Missions, Operating Areas, and Weather Sensitivities. | 14 |
| Chapter 3— | | AIRFIELD INTEGRATION FUNCTION | 15 |
| | 3.1. | General..... | 15 |
| | 3.2. | Operational Hours..... | 15 |
| | 3.3. | Observations. | 15 |
| Figure | 3.1. | Airfield Diagram..... | 16 |
| | 3.4. | Cooperative Weather Watch..... | 16 |
| | 3.5. | Alternate Observing Sites. | 16 |
| | 3.6. | Eyes Forward. | 16 |
| | 3.7. | PMSV Support..... | 17 |
| | 3.8. | Weather Sensors. | 17 |
| | 3.9. | Terminal Aerodrome Forecast (TAF)..... | 17 |
| | 3.10. | Resource Protection. | 17 |
| | 3.11. | Climatological Services..... | 17 |
| Chapter 4— | | MISSION INTEGRATION FUNCTION | 18 |
| | 4.1. | General..... | 18 |
| | 4.2. | Operational Hours..... | 18 |
| | 4.3. | Mission Execution Forecast (MEF)..... | 18 |
| Figure | 4.1. | Misawa Mission Execution Forecast (SOFMEF)..... | 20 |
| | 4.4. | Mass Brief..... | 21 |
| | 4.5. | MISSIONWATCH. | 21 |
| | 4.6. | Dissemination of Weather Products..... | 21 |
| Chapter 5— | | STAFF INTEGRATION FUNCTION | 22 |
| | 5.1. | General..... | 22 |
| | 5.2. | Operational Hours..... | 22 |
| | 5.3. | Daily 35 FW Stand-up Briefs. | 22 |
| | 5.4. | Instrument Refresher Course (IRC)/SOF Briefings..... | 22 |
| | 5.5. | Safety Briefs. | 22 |

| | | |
|-------------------|---|-----------|
| 5.6. | Flight Information Publication (FLIP) Weather Updates. | 22 |
| 5.7. | Pre-Deployment Planning Briefings. | 22 |
| Chapter 6— | SPACE WEATHER SUPPORT AND SERVICES | 23 |
| 6.1. | General..... | 23 |
| 6.2. | Limitations. | 23 |
| 6.3. | Space Weather Alerts and Warnings. | 23 |
| 6.4. | Products. | 23 |
| Chapter 7— | SPECIAL MISSION REQUIREMENTS | 24 |
| 7.1. | General..... | 24 |
| 7.2. | Wing Safety (35 FW/SE)..... | 24 |
| 7.3. | Misawa Command Post (35 FW/CP)..... | 24 |
| 7.4. | Supervisor of Flying (SOF) Support (35 OG/OGV)..... | 24 |
| 7.5. | 35th Civil Engineer Squadron (35 CES)..... | 25 |
| 7.6. | 35th Security Forces Squadron (35 SFS)..... | 26 |
| 7.7. | 35th Operations Support Squadron (35 OSS)..... | 26 |
| 7.8. | Wing Scheduling (35 OSS/OSO)..... | 26 |
| 7.9. | Draughon Range (DR). | 26 |
| 7.10. | 13th Fighter Squadron and 14th Fighter Squadron. | 27 |
| 7.11. | Misawa Security Operations Center (MSOC). | 27 |
| 7.12. | Naval Air Facility/PATRECONFOR 7th FLT. | 27 |
| Chapter 8— | RESOURCE PROTECTION SERVICES | 28 |
| 8.1. | General..... | 28 |
| 8.2. | Weather Watches. | 28 |
| Table 8.1. | Weather Watch Criteria and Lead Times..... | 28 |
| 8.3. | Weather Warnings. | 28 |
| Table 8.2. | Weather Warning Criteria and Lead Times. | 29 |
| 8.4. | Observed Weather Warnings. | 29 |
| 8.5. | Forecast and Observed Weather Advisories. | 29 |
| Table 8.3. | Forecast and Observed Weather Advisories. | 30 |

| | | | |
|---|-------|---|-----------|
| | 8.6. | Upgrades and Downgrades. | 30 |
| | 8.7. | Amendments. | 31 |
| | 8.8. | Cancellation. | 31 |
| | 8.9. | Toxic Corridor. | 31 |
| | 8.10. | Severe Weather Action Plan (SWAP). | 31 |
| Table | 8.4. | Conditions Requiring Notification/Activation of SWAT standby member. | 32 |
| Table | 8.5. | SWAP Duties and Responsibilities. | 33 |
| | 8.11. | Severe Weather Damage Reporting/OPREPs. | 33 |
| Table | 8.6. | Items Required for OPREP-3 Report. | 34 |
| | 8.12. | Chemical Downwind Messages (CDM). | 34 |
| | 8.13. | Emergency/Crisis Action Responses. | 34 |
| Chapter 9— WEATHER INFORMATION DISSEMINATION | | | 35 |
| | 9.1. | General. | 35 |
| | 9.2. | Dissemination Systems and Backups. | 35 |
| | 9.3. | Dissemination and Backup Procedures. | 35 |
| Chapter 10— OWS/WF BACKUP SUPPORT | | | 36 |
| | 10.1. | General. | 36 |
| | 10.2. | 17 OWS. | 36 |
| | 10.3. | WF. | 36 |
| Chapter 11— RECIPROCAL SUPPORT | | | 37 |
| | 11.1. | General. | 37 |
| | 11.2. | Misawa Command Post will: | 37 |
| | 11.3. | Supervisor of Flying (SOF) will: | 37 |
| | 11.4. | 35th Aerospace Medicine Squadron/Bioenvironmental Engineering will: | 37 |
| | 11.5. | 35th Civil Engineer Squadron will: | 38 |
| | 11.6. | 35th Communications Squadron will: | 38 |
| | 11.7. | Airfield Management Operations Flight will: | 38 |
| | 11.8. | Wing Scheduling will: | 38 |
| | 11.9. | Draughon Range will: | 38 |

| | |
|--|-----------|
| 11.10. The 13 FS and 14 FS will: | 39 |
| 11.11. American Forces Network (AFN) – Misawa will:..... | 39 |
| 11.12. Naval Air Facility (NAF) Misawa will:..... | 39 |
| 11.13. 17th Operational Weather Squadron..... | 39 |
| Attachment 1— GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION | 41 |
| Attachment 2— JASDF WEATHER OBSERVING CRITERIA | 46 |
| Attachment 3— ADMINISTRATIVE MISSION EXECUTION FORECAST PROCESS | 51 |
| Attachment 4— 35 MXG WEATHER IMPACTS AND REQUIRED ACTIONS | 57 |
| Attachment 5— WEATHER LIMITATIONS AND SENSITIVITIES ON CUSTOMERS | 59 |
| Attachment 6— TROPICAL CYCLONE CONDITIONS OF READINESS (TCCOR) CRITERIA AND DESTRUCTIVE WINDS | 68 |

Chapter 1

GENERAL INFORMATION

1.1. General. The 35th Operations Support Squadron (OSS/OSW) Weather Flight (WF) provides and/or arranges weather services to the 35th Fighter Wing (FW) and other units assigned to Misawa AB, Japan. Basic concepts and procedures are outlined in Air Force and Pacific Air Forces directives. This document establishes requirements and procedures for areas of weather support that must be coordinated at the local level to meet mission needs. It consolidates weather support requirements and procedures for peacetime operations and eliminates the need for written agreements between the weather unit and supported organizations. It does not cover weather support for emergency war operations (EWO), since this is covered in the applicable United States Forces Japan, 5th Air Force (5 AF), and 35 FW OPLANs.

1.2. Background.

1.2.1. The 35 OSS/OSW, Weather Flight (WF), performs three (3) main functions: staff, airfield, and mission; to maintain efficiency and effectiveness of the Misawa Air Base mission.

1.2.2. The 17th Operational Weather Squadron (OWS), Misawa Air Base's collaboration unit (CU), located at Joint Base Pearl Harbor – Hickam, HI will provide regional and operational level products and information to Air Force and Army units in the Pacific Theater overseas and the continental United States (CONUS), to include Misawa Air Base, Japan.

1.2.3. The Japan Air Self Defense Force (JASDF) Weather Squadron located on Misawa Air Base, Japan will provide the official terminal aerodrome forecast (TAF) and hourly observations for the airfield (Ref. MOUI 3005). Details on criteria and dissemination times will be defined in section 1.3.3.1.

1.3. Responsibilities

1.3.1. The 35 OSS/OSW implements their responsibilities under three (3) main elements:

1.3.1.1. **Staff Integration Function** provides direct interface to the 35 FW Commander (35 FW/CC) and staff. 35 OSS/OSW assists in the development of weather support plans and processes for the 35 FW and associated units. The WF will support Misawa Air Base in providing products and/or weather related information required by regulations or as directed by the 35 FW/CC.

1.3.1.2. **Airfield Support Function** provides resource protection, meteorological watch (METWATCH), and are the “eyes forward” for the 17 OWS. The WF has the role as OWS backup with the role of issuing, amending, and canceling forecasted and observed watches, warnings, and advisories (WWAs), as required. The WF is responsible for providing mission impacting weather information to the 35 FW if operations occur away from main operating locations.

1.3.1.3. **Mission Integration Function** provides support to the 35 FW through Mission Execution Forecasts (MEF) or similar means. The WF is responsible for mission/event

planning briefs for the 35 FW mission. Non-routine mission briefings can be requested through this function.

1.3.2. 17th Operational Weather Squadron (OWS).

1.3.2.1. Using AFI 15-128, *Aerospace Weather Operations- Roles and Responsibilities* (February 2011), the OWS will provide resource protection, regional and operational-level weather products and information, METWATCH, and flight weather briefings (FWB) support.

1.3.2.2. The Installation Data Plan (IDP) between the 35 OSS/OSW and 17 OWS provides specific responsibilities concerning the two agencies. 17 OWS will issue all forecasted WWAs. When the WF is closed, they will assume responsibility for issuing observed WWAs referenced on Table 8.2 (i.e. lightning) and Table 8.3 with superscript “1”. FWBs will also be provided by the 17 OWS when the WF cannot support transient aircrews.

1.3.3. Japan Air Self Defense Force (JASDF)

1.3.3.1. The Japan Air Self Defense Force will provide the official forecast for Misawa Air Base. They will also disseminate the hourly observations with forecasts at the end of each observation. The JASDF TAF and Observations are only available from the Joint Weather System (JWS) Web Service and “.mil” weather related websites. Specifications are listed below:

1.3.3.1.1. The JASDF forecaster issues a Terminal Aerodrome Forecast (TAF) every 12 hours (2300Z/0800L and 1100Z/2000L), each covering a 24- hour period.

1.3.3.1.2. The JASDF Weather Squadron issues short forecasts, appended to the observation, according to local procedures.

1.3.3.1.3. JASDF forecasters will not amend the TAF; updates to the TAF will be shown in the hourly observations.

1.3.3.2. To request access to the TAF and Observations through the appropriate “.mil” websites, contact the WF at DSN 315-226-3065/4930 on how to do so.

1.3.3.3. The JWS Web System and JASDF Radar are direct feeds. The WF does not have any responsibility or capability to maintain these systems.

1.4. Duty Priorities. In order to ensure high priority duties are accomplished during periods of increased operations tempo, the 17 OWS duty priorities are listed in Table 1.1 and the WF duty priorities are listed in Table 1.2.

Table 1.1. 17 OWS Duty Priorities.

| ORDER OF PRIORITY | Duty Priorities |
|-------------------|--|
| 1 | Perform Emergency War Order (EWO) Taskings. |
| 2 | Respond to Aircraft Emergencies/Mishaps |
| 3 | Execute OWS Evacuation |
| 4 | Support Search and Rescue (SAR) and Urgent MEDEVAC Missions |
| 5 | Provide Products and Services for Combat, Contingencies and Military Operations Other than War (MOOTW) (e.g., graphics, text bulletins, MOAFs) |
| 6 | Provide Airborne Aircrew Support/respond to phone patches |
| 7 | Transmit Urgent/Severe Pilot Weather Reports (PIREPs) and Air Reports (AIREPs) longline |
| 8 | Perform Severe Weather Action Procedures (SWAP) Operations |
| 9 | Perform METWATCH and provide Weather Products for Resource Protection (forecast weather watches, warnings, advisories, etc.) |
| 10 | Provide Flight Weather Briefings |
| 11 | Prepare and Disseminate Peacetime/Exercise Regional- and Operational-Level Graphics and Alphanumeric Products |
| 12 | Perform and Disseminate Aerodrome Forecasts (TAFs) |
| 13 | Transmit PIREPs and AIREPs longline |
| 14 | Perform MISSIONWATCH Activities |
| 15 | Provide other Air and Space Weather Products, Information and Weather Briefings |
| 16 | Accomplish other Routine Weather Requirements |
| 17 | Accomplish Recurring Training |
| 18 | Accomplish Administrative Tasks |

Table 1.2. 35 OSS/OSW Duty Priorities.

| Order of Priority | Duty Priorities |
|-------------------|---|
| 1 | Complete Emergency War Order (EWO) taskings |
| 2 | Execute weather flight evacuation procedures |
| 3 | Respond to aircraft/ground emergencies |
| 4 | Respond to Pilot to Metro Service (PMSV) calls |
| 5 | Disseminate weather warnings, watches, and advisories locally |
| 6 | Provide weather information for Supervisor of Flying (SOF) support. |
| 7 | Disseminate severe pilot reports (PIREPS) locally and longline (worldwide). |
| 8 | Perform MISSIONWATCH activities |
| 9 | Disseminate pilot reports (PIREPS) locally and longline (worldwide). |
| 10 | Severe Weather Actions Procedures |
| 11 | Provide scheduled weather briefings |
| 12 | Provide eyes forward/Collaborate with regional Operational Weather Squadron |
| 13 | Provide routine or unscheduled telephone/counter briefings |

1.5. Operational Hours. WF normal hours are from 0000L Monday through 1700L Friday with exceptions of PACAF family days, federal holidays, and non-flying days and consistent with the most recent Flight Information Publication (FLIP) entry and applicable Notice to Airmen (NOTAM) for Misawa. At a minimum, WF will be manned at least 3 hours prior to the first pilot brief until the last sortie lands. During closed hours, WF personnel will be on standby. A monthly standby roster will be provided to the Misawa Command Post and 17 OWS NLT the 28th of the prior month. If weather support is required, contact the stand-by forecaster directly or through the command post. If the duty forecaster cannot be reached, contact the Flt/CC or NCOIC of the 35 OSS/OSW.

1.6. Assumptions, Shortfalls, and Limitations.

1.6.1. WF Assumptions. Weather support can only be provided if appropriate facilities, funding, communications, personnel, and indigenous support (e.g. power, water, etc.) are available.

1.6.2. WF Shortfalls. Some services may not always be available (out-of-station briefings) due to WF manning, station evacuation, or other higher priority missions.

1.6.2.1. To ensure continued real-world mission-related and resource protection support, 35 OSS Weather Forecasters, in Combat Mission Ready-status, will not provide augmentation to non-weather tasks during Operational Readiness Exercises. Further, augmentation to other projects (e.g. base details) outside of exercises will not conflict with duty priorities established in Table 1.2.

1.6.3. WF Limitations.

1.6.3.1. The Weather Flight receives the official TAF and observation from the JASDF Weather Squadron. Minor deviations from this forecast may occur due to mission tailoring and will be coordinated between the 35 OSS/OSW and JASDF Weather Squadron.

1.6.3.1.1. The WF does not have the capability to request the JASDF Weather Squadron to take a special observation. The SOF will request a special to be taken through the tower superintendent, who will then ask the Weather Squadron to take another observation.

1.6.3.2. Short notice requests for routine weather services must be minimized. Pre-coordination for weather services is a major factor in allowing WF leadership to de-conflict and prioritize requests based on available resources and duty priorities. Requests for weather support outside of the WF's operational chain of command will be routed through OSS leadership. Requests for weather support that the WF cannot provide or arrange are routed through OSS leadership for a support/do not supports decision.

1.6.3.3. Due to the unpredictability of weather events, forecasts beyond 24 hours will be used for planning purposes only.

1.7. Weather Equipment and Technical Assistance. The WF relies heavily on various forms of equipment in order to provide weather support. Most noteworthy are the FMQ-19, FMQ-22, TMQ-53, Joint Environmental Toolkit (JET), JWS Web System, Kestrel, phones, and PMSV.

1.7.1. Equipment Maintenance. The below paragraphs list the organizations responsible for preventative maintenance and repairs of meteorological and communication equipment.

Table 1.3. Meteorological Equipment.

| Meteorological Equipment | Maintaining Organization | Mission Impact |
|--|-----------------------------|--|
| FMQ-19 | 35 OSS/OSAM | USAF automated weather observing system in use at Misawa AB. Any outage removes instantaneous METWATCH of airfield conditions at a resolution not possible from the GMQ-14. |
| FMQ-22 | 35 OSS/OSAM | Sole automated weather observing system in use at Draughton Range. Any outage removes all weather observing capabilities from the range, limiting low-level use of the facilities. |
| TMQ-53 | 35 OSS/OSW and/or AFWA FSSC | Deployable weather observing system. Any outage critically impacts unit's deployable capabilities. |
| Kestrel 4500 | 35 OSS/OSW | Deployable wind measuring tool. Used in back-up roles. Outages marginally affect deployable observing capabilities. |
| Communications Equipment | Maintaining Organization | Mission Impact |
| JET | 35 CS/NCC | Primary means to disseminate weather watches, warnings, and advisories, weather sensor data, and weather pilot reports for Misawa AB and Draughton Range. Any outage is critical to 35 FW emergency response and recovery mission. |
| LAN | 35 CS/CFP | Primary means to disseminate tailored weather forecasts, observations, watches, warnings, and advisories for Misawa AB and Draughton Range. Any outage is critical to 35 FW operations. |
| Phones/Hotlines | 35 CS/SCOIP | Primary means to disseminate updates to the SOF and key leadership. Any outage is critical to 35 FW operations. |
| UHF Radio (PMSV) | 35 CS/SCOT | Primary means to contacting and relaying time-critical weather information to DoD and JASDF airborne aircraft. Any outage is critical to 35 FW and 3 AW operations. |
| Note: The above equipment will be maintained and repaired according to the maintaining organization's prescribed priorities and scheduled response times. | | |

1.7.2. AFWA Fielded Systems Center (FSSC) Equipment Technical Assistance. The AFWA FSSC is the single point of contact for the 35 OSS/OSW when it requires technical assistance with the FMQ-19, FMQ-22, TMQ-53, or JET. Service is provided 24 hours a day, 7 days a week to handle trouble calls. The FSSC will maintain detailed information on all outages and will track these outages until successful resolution. The 35 OSS/OSW will not contact the contractors directly unless otherwise directed.

1.7.2.1. The 35 OSS/OSW will conduct basic troubleshooting to determine the nature of the equipment outage using system manuals, local troubleshooting guides, or available instructions before contacting the FSSC. With assistance from the AFWA FSSC, 35 OSS/OSW personnel will generally be able to resolve most problems. If the problem cannot be resolved, the FSSC will contact the appropriate maintenance agency. In some cases, the FSSC may direct the unit to contact the 35 CS.

1.8. Alternate Operating Location (AOL).

1.8.1. Weather Flight will re-locate to Building 918, Room 17 in the event of a building evacuation. The alternate location phone number will be provided to Command Post, 17 OWS, and published in installation NOTAMs. The flight will continue operational FW support and the WF's "eyes forward" responsibilities for the 17 OWS. Most WF services and support will be provided, but will require a case-by-case assessment dependent on communication line status, equipment status, limited SIPR availability, etc. Expect most services to be somewhat degraded (weather products, pilot briefings, etc) due to limitations of facilities and dedicated data services, including sensors and various data types (METSAT, radar imagery, etc.). The JWS Web Service and JASDF Weather Radar feed will not be available at the AOL. For real-world mission reasons, the WF will not evacuate during exercises.

1.9. Release of Weather Information to Non-DoD Agencies and Individuals. Release of weather information to non-DoD organizations will not be provided unless authorized by Air Force Instructions or 35 FW/CC (or designated representative). In addition, no Misawa AB or 35 FW agencies will release weather data to outside agencies unless first coordinated with 35 OSS/OSW.

1.10. Post – Mission Analysis / Feedback. Per AFH11-203, Volume 2, *Weather for Aircrews*, units that regularly utilize weather support from the WF should provide post-mission/utilization feedback, when possible. This information will be used to ensure products delivered to flying customers are accurate, relevant, and timely.

1.10.1. Formal/informal feedback methods include:

1.10.1.1. Completing a feedback form located on the WF's SharePoint site.

1.10.1.2. Calling the forecaster counter at 315-226-3065/4930.

1.10.1.3. Email and/or phone calls to the Flight/CC or NCOIC.

1.10.1.4. Face to face feedback after any briefing.

1.10.1.5. Calling on PMSV at 344.6 MHz.

1.10.2. The WF will, in turn, utilize this data to refine their mission support role and gauge unit strength and weaknesses.

1.11. Mishap Procedures. Misawa WF and the 17 OWS have a role when the airfield is advised of an emergency or mishap. The WF will ensure applicable data is used in the development of any weather product, and/or service provided is saved for an investigation (to include MEFs, space weather products, etc.). The WF and 17 OWS will save enough data from before through after the mishap to fully reconstruct the environmental conditions.

Chapter 2

MISSION INFORMATION

2.1. General. Misawa Air Base has a specific mission, specific weapons system, and many different organizations to support. All these are limited by weather parameters. This chapter will identify all of these factors associated with the type of weather that affects the mission, weapon system, and organizations.

2.2. Supported Organization/Missions/Requirements. 35 OSS/OSW provides weather support to the following organization with the accompanying mission and requirement:

Table 2.1. Misawa Air Base Agency/Mission/Requirement Listing.

| Organization | Mission | Requirements |
|------------------------------|---|---|
| 35 Fighter Wing (F-16) | Suppression of Enemy Air Defense (SEAD) | - see Tables 2.2 and 2.3 - All WWAs, see Chapter 8 |
| NAF Misawa Operations (C-12) | Passenger and Cargo Transport | - see 7.12 for support details |
| PATRECONFOR 7th FLT (P-3) | Patrol and Reconnaissance | - see 7.12 for support details |

2.3. Geographic Area of Responsibility. The WF provides mission-tailored weather support for flying areas used by the 13th and 14th Fighter Squadrons.

- 2.3.1. Draughon Range (R-130)
- 2.3.2. Bravo, Charlie, and Gaicho airspace
- 2.3.3. Additional areas as required (e.g. Alpha, Delta, Kary, etc.)

Figure 2.1. Training and Restricted Areas Surrounding Misawa Air Base.

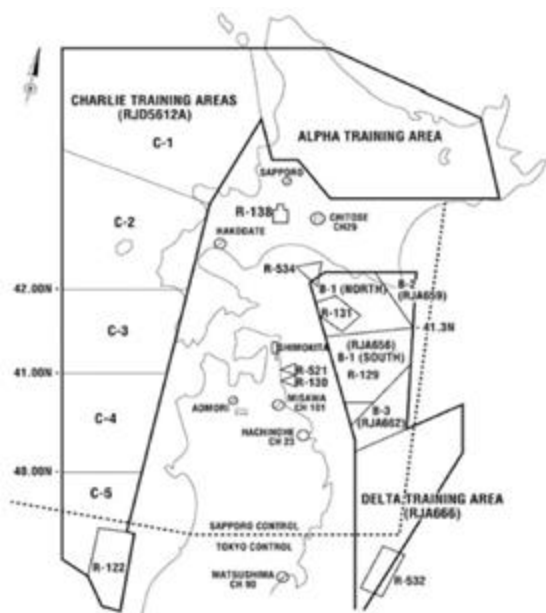
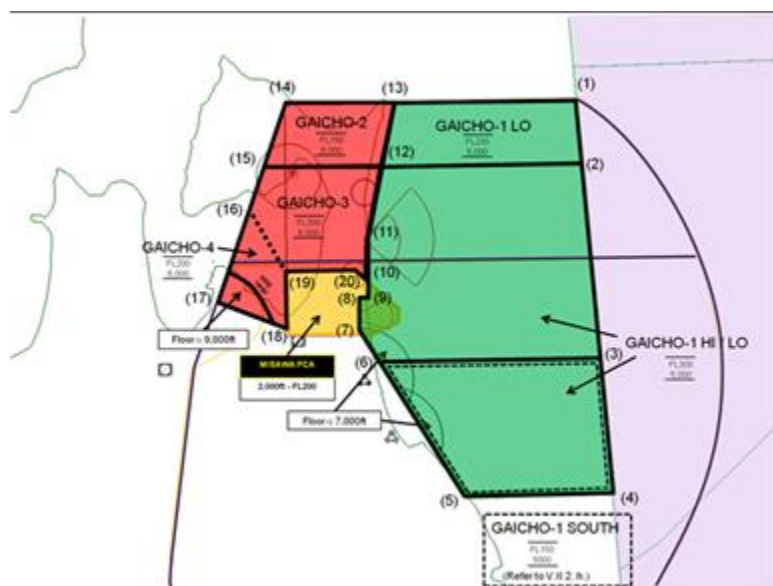


Figure 2.2. Gaicho Training Areas.

2.4. Airframe-Specific Weather Limitations. The following tables provide the general airframe weather limitations based on AFI 11-series.

Table 2.2. Weather Limitations.

| Weather Condition | Impact | Customer Action |
|------------------------|-------------------------------------|------------------------------------|
| Cig/Vis < 2,000 or 3SM | Alternate required | Take actions to prepare for divert |
| Cig/Vis < 1,000 or 2SM | Terminal not suitable for alternate | Select another alternate |

Table 2.3. F-16 Program's Sensitivities.

| Event | Minimum |
|---|---|
| Takeoff/Land (Formation/Single Ship) | <u>Cig/Vis</u> E = 1500/3 D = 700/2 C = 500/1 ½ B = 300/1 A = 200/½ |
| Takeoff /Land | <u>Crosswinds</u> ≥ 15 knots with dry runway, icy or standing water (Formation) ≥ 25 knots with dry runway, or ≥ 23 knots with wet runway (Single Ship) |

2.5. Training Missions, Operating Areas, and Weather Sensitivities. The 35 FW will frequently train at Draughon Range, Charlie, Bravo, or Gaicho airspace. Pilot discretion is used to determine mission go/no-go-regardless of the weather phenomena listed in the MEF/Mass Brief.

Chapter 3

AIRFIELD INTEGRATION FUNCTION

3.1. General. Airfield Support include those actions that affect the Misawa aerodrome (defined within 5 nautical miles of the airfield). Examples include severe weather actions, OWS backup, PMSV, and resource protection. Severe weather actions and resource protection are addressed in depth in Chapter 8.

3.2. Operational Hours. Airfield Support are normally provided Monday-Friday (0700L-1700L/2200Z-0800Z) with standby support through the weekend, federal holidays, and PACAF down days. Weather personnel performing these services can be contacted at DSN 315-226-3065/4930. A standby person is available during periods of time when the weather stations is closed and can be contacted via Command Post, DSN 315-226-9899.

3.3. Observations. Per the MOUI-3005, observations are taken by the Japan Air-Self Defense Force, Weather Squadron forecasters and disseminated via the JWS Web Service. The 35 OSS WF may provide limited, local weather updates/information solely for 35 FW flying operations using the GMQ-14/FMQ-19 observation systems.

3.3.1. Observing Site. The JASDF's official point of observation on Misawa AB is the JASDF observation tower, Bldg 990.

3.3.2. Observation Site Limitations. The following limitation affects surface observation quality:

3.3.2.1. Lighting near the observation point reduces the observer's visibility at night.

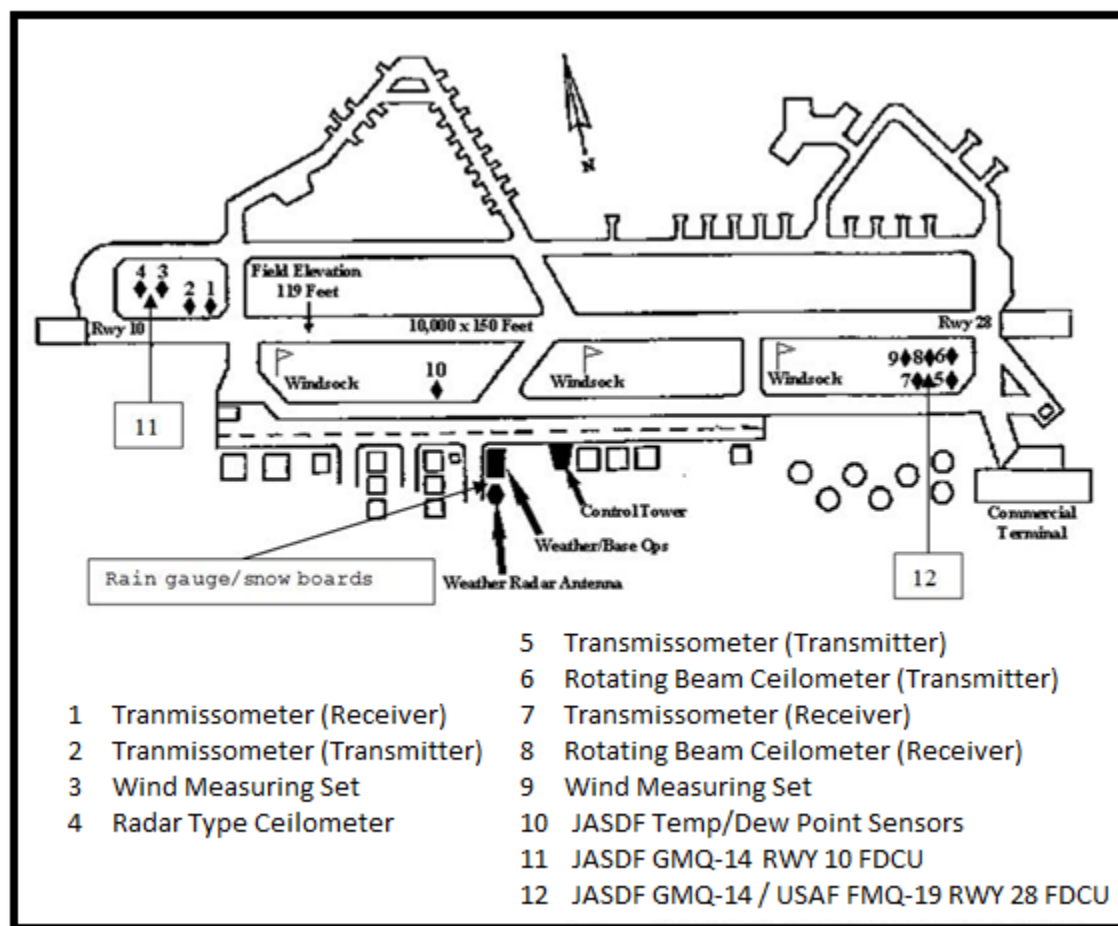
3.3.3. Basic Weather Watch (BWW). JASDF conducts a basic weather watch in accordance with Attachment 2.

3.3.4. LOCAL Observation. A LOCAL observation is taken for criteria established locally where worldwide dissemination is not required.

3.3.5. Special Observation (SPECI). The JASDF take a special (SPECI) observation when observed weather criteria pass through significant weather thresholds established by JASDF Guidance 98-11. SPECI is disseminated worldwide using the Global Telecommunications System (GTS) and is automatically ingested into the Automated Weather Network (AWN).

3.3.6. JASDF Weather Observing Criteria. Refer to Attachment 2 for specification criteria.

Figure 3.1. Airfield Diagram.



3.4. Cooperative Weather Watch. A traditional cooperative weather watch is not in force between the JASDF ATC facility and the JASDF Weather Squadron due to the JASDF separation of duties between their personnel and MOUI 3005; however, a non-traditional cooperative weather watch is observed. Rather than cooperatively observing with an ATC facility, JASDF weather personnel are permanently situated within a tower of equal height and approximate location. Additionally, through the JASDF JWS system most observations are displayed within the WF. Further, Locals and non-longline SPECIs are available within the WF through the Japan Meteorological Agency's METAIR program. Finally, JASDF ATC will transmit pertinent weather warnings and advisories and weather alternate information on the ATIS (as directed by MOUI 3005). The JASDF Weather Squadron will pass the warnings and advisories to ATC. In addition, the SOF will forward the USAF weather WWAs to the 35 FW aircrews.

3.5. Alternate Observing Sites. The JASDF weather squadron utilizes the Base Defense Weather Flight as an alternate observing site/team. Observations taken at the alternate site will be pushed via the JWS System.

3.6. Eyes Forward. WF technicians will relay significant, time-sensitive meteorological information to the forecasters conducting resource protection and METWATCH operations at

the 17 OWS. “Eyes Forward” provides an organized approach for weather personnel to maintain situational awareness of the current and future meteorological situation within a designated area.

3.7. PMSV Support. Weather information is available during 35 FW flying hours on frequency 344.6 MHz. The duty weather technician will monitor PMSV traffic during normal operations for all aircraft contacts. Phone patches are available on 226-3065.

3.7.1. Pilot Weather Reports (PIREPs) provide forecasters with crucial weather information required to ensure accurate forecast products and safety of flight. All supported flying squadron commanders will maintain an active PIREP program and pass pertinent information to weather personnel as soon as possible via the PMSV, SOF, Top 3, or Mission Integration Function forecaster. Pilots will relay any weather encountered which may jeopardize flight safety.

3.7.2. Weather personnel will disseminate PIREPs to the SOF, TOP 3 and JASDF following local procedures. All PIREPs will be disseminated longline.

3.7.3. PMSV Outages. When the PMSV is logged out/not usable, the Yokota Weather Flight will monitor PMSV calls directed at Misawa. If the outage is (or expected to be) longer than 6 hours, the Tower will list the service as unavailable on the Automated Terminal information System (ATIS). The WF will be available through the Command Post as a phone patch. The WF will notify Airfield Management to issue a NOTAM when the outage exceeds 6 hours.

3.7.4. A daily radio check is executed to ensure proper PMSV functionality.

3.8. Weather Sensors. The FMQ-19 is available for real-time data retrieval. The JASDF GMQ-14 is also used for 1-minute observation data, via the JWS Web Service.

3.9. Terminal Aerodrome Forecast (TAF). The Misawa Air Base TAF will be produced and disseminated by the JASDF Weather Squadron, IAW with MOUI 3005. The TAF is valid for 24 hours and will be issued 2300Z (0800L) and 1100Z (2000L).

3.10. Resource Protection. Specific details for Resource Protection are covered in Chapter 8.

3.11. Climatological Services. The WF will provide a monthly climatology summary for Misawa AB via SharePoint. The summary will include at a minimum:

3.11.1. Monthly maximum, mean, and minimum ambient air temperatures

3.11.2. Daily, monthly, annual rainfall and snowfall totals

3.11.3. Daily ambient air temperatures

3.11.4. Daily peak wind and direction

3.11.5. Monthly maximum 24-hour rainfall and snowfall total

Chapter 4

MISSION INTEGRATION FUNCTION

4.1. General. Mission services are those actions directly related to completing each customer's daily mission requirements (e.g. MEF, DD Form 175-1, etc.). The Mission Execution Forecast (MEF) is the primary tool used to accomplish these tasks. MEFs are tailored to individual customer requirements and may include: a DD Form 175-1, Operational Readiness Exercise MEF, or a Misawa Air Festival weather forecast.

4.2. Operational Hours. Mission services are available Monday-Thursday (0000L-2359L) and on Friday (0000L-1700L) with standby support through the weekend, federal holidays, and PACAF down days. Mission Integration hours may be adjusted based on the 35 FW flying hours and the latest, official hours are published in the local FLIP Supplement and associated airfield Notice to Airmen (NOTAM). Weather personnel performing these services can be contacted at DSN 315-226-3065/4930. A standby person is available during periods of time when the weather station is closed and can be contacted via Command Post, DSN 315-226-9899.

4.3. Mission Execution Forecast (MEF). MEFs are mission-specific forecasts that are developed using a two-part (Operational and Administrative), four-step process and may be provided by a number of methods (web-based, verbally, share drive, etc.). During this process, the WF will fuse and tailor products created by strategic and theater weather centers, as well as information supplied by local units (e.g. flying schedule) and agencies. The result is a product and information designed to provide timely, accurate, and relevant weather intelligence to the OG Commander, SOF, and Top 3 by whatever means proves most effective. The aforementioned personnel will be provided all pertinent information by the WF to various meteorological threats that may impact flying operations to make an informed decision using proper Operational Risk Management. MEFs must be horizontally consistent with (but not necessarily mirror) products issued by JASDF, 17 OWS, and AFWA. However, during rapidly changing conditions, emergencies, or when conditions threaten resource protection, the WF will amend the MEF to accurately reflect conditions and back brief the SOF, Top 3, and 17 OWS when time permits.

4.3.1. The SOFMEF will be posted 1.5 hours prior to the first take-off and the Mass Brief will be available one hour prior to the brief time.

4.3.2. Misawa AB (RJSM) weather data on top (refer to Figure 4.1): This data includes the weather conditions for the duration of the day's flight schedule. The crosswinds portion will turn red when it is 25 knots or greater.

4.3.3. Hazards (refer to Figure 4.1): This will cover at least a 25 mile radius of the airfield, alternates, and/or the locations of which the aircrews will be flying throughout the duration of their mission. If more detail is needed, graphics will be added below the satellite image.

4.3.4. Airspace forecasts (refer to Figure 4.1): Locations Charlie, Draughton Range, Gaicho, and Bravo will be forecasted on a daily basis. Due to the large area of each section, forecasts will occasionally be broken into smaller regions to better indicate the weather phenomena. The clouds will be provided as a thickness layer, to include bases and tops, with cloud coverage and occasional variances in FEW, SCT, BKN, or OVC (e.g. 020 BKN V OVC 100). Winds, waves, and sea surface temperatures are coded with specific colors when different thresholds are crossed.

4.3.4.1. Sea surface temperatures: When temperatures are $<60^{\circ}\text{F}$, the box will be shaded light blue to indicate an unfavorable threshold has been crossed.

4.3.4.2. Waves: Colors will change from Green ($\leq 5\text{ft}$), to Yellow ($\leq 10\text{ft}$), to Red ($>10\text{ft}$) depending on the thresholds the wave heights cross.

4.3.4.3. Wind Speed: Any wind speed that is ≤ 25 knots will be coded Green. Any wind speed >25 knots will be coded Red.

4.3.4.4. These parameters are based on Wavewatch III ocean modeling prediction.

4.3.5. Alternate/Divert Airfields include the TAFs/forecast weather conditions for suitable airfields in the local training area if take-off or destination weather for RJSM are below F-16 minimums.

4.3.5.1. The following alternates are used during routine MEFs unless otherwise specified.

4.3.5.1.1. Hachinohe (RJSH)

4.3.5.1.2. Chitose (RJCH)

4.3.5.1.3. Matsushima (RJST)

4.3.5.1.4. Yokota (RJTY)

4.3.5.1.5. Hakodate (RJCH)

4.3.5.1.6. Aomori (RJSA)

4.3.5.2. The “Time” column will be highlighted:

4.3.5.2.1. Green: Alternate weather is $\geq 2000\text{FT}/3\text{SM}$.

4.3.5.2.2. Yellow: Alternate weather is $<2000\text{FT}/3\text{SM}$ to $1000\text{FT}/2\text{SM}$.

4.3.5.2.3. Red: $<1000\text{FT}/2\text{SM}$ and/or crosswinds ≥ 20 knots.

Figure 4.1. Misawa Mission Execution Forecast (SOFMEF).

| Misawa Mission Execution Forecast | | | | DATE | Post Time | MEF # | AMD | FORECASTER | | | |
|---|-----------------------------|--|-----------|-----------|-----------|--|---------|------------|----------|----------|-------------|
| UPDATES WILL BE IN BOLD LETTERING | | | | 12-May-15 | 1030 | 12-01 | | TSgt Marks | | | |
| Time (Local) | Clouds | VIS | WX | Wind | X-WINDS | MISAWA AB WINDS ALOFT | FLT LVL | WINDS | TEMP C | BMNT | SOLAR/LUNAR |
| 11-13 | FEW030 BKN150 BKN200 | 7 | | 10006 | 0 | KT | 350 | 27065 | -44 | BMCT | 0313 |
| 13-15 | FEW030 SCT050 BKN100 OVC150 | 5 | -SHRA | 10010 | 0 | KT | 300 | 26060 | -32 | Sunrise | 0421 |
| TEMPO 13-15 | FEW030 BKN050 OVC100 | 4 | -SHRA | | | KT | 250 | 27050 | -20 | Sunset | 1841 |
| | | | | | | KT | 200 | 27050 | -11 | EECT | 1912 |
| | | | | | | KT | 150 | 27040 | -04 | EENT | 1950 |
| | | | | | | KT | 100 | 23025 | 02 | Moonrise | 0032 |
| | | | | | | KT | 050 | 20015 | 08 | Moonset | 1150 |
| | | | | | | KT | 020 | 18010 | 15 | % Illum | 48 % |
| HAZARDS | | | | | | | | | | | |
| THUNDERSTORMS | | NONE | | | | | | | | | |
| UL TURBULENCE | | NONE | | | | | | | | | |
| LL TURBULENCE | | MDT-SVR TURB SFC-130 SOUTH OF 38N; MDT-SVR TURB SFC-110 BETWEEN 39N-38N; LGT OCNL MDT TURB SFC-060 BETWEEN 40 SN - 39N | | | | | | | | | |
| ICING | | LGT MIXED 120-160 OVER SEA OF JAPAN AFTER 15L | | | | | | | | | |
| MISAWA WATCHES, WARNINGS AND ADVISORIES | | | | | | | | | | | |
| NONE | | | | | | | | | | | |
| TAKE-OFF TEMP (F) | FZG LVL | CONTRAILS | MIN ALSTG | RSC/RCR | SPACE WX | SPACE WX PERTAINS TO UHF INTERFERENCE | | | | | |
| 62 | 120 | 360-590 | 29.85 | DRY | GREEN | | | | | | |
| OP AREA FORECASTS | | | | | | | | | | | |
| OP AREAS | QUAD | AIRSPACE CLOUDS | | | | WX | SST (F) | WAVES | WIND DIR | WIND SPD | |
| CHARLIE 2 | ALL | 030 SCT-BKN 060 / 100 BKN 300 | | | | -SHRA | 48 | 3 | 130 | 10 | |
| | | | | | | | | | | | |
| CHARLIE 3 | ALL | 020 SCT-BKN 060 / 080 BKN 300 | | | | -SHRA | 48 | 2 | 140 | 10 | |
| | | | | | | | | | | | |
| CHARLIE 4 | ALL | 020 BKN 300 | | | | -SHRA | 50 | 2 | 150 | 10 | |
| | | | | | | | | | | | |
| DRAUGHON | ALL | 100 BKN 300 | | | | NSW | 51 | 2 | 100 | 10 | |
| | | | | | | | | | | | |
| GAICHO | ALL | 100 BKN 300 | | | | NSW | 48 | 3 | 120 | 10 | |
| | | | | | | | | | | | |
| BRAVO | ALL | 130 BKN 300 | | | | NSW | 47 | 3 | 140 | 10 | |
| | | | | | | | | | | | |
| Significant Wave Heights < 10 ft and Sustained Surface Winds < 25 knots | | | | | | Significant Wave Heights > 10 FT and/or Sustained SFC Winds > 25 KTS | | | | | |
| ALT | TIME (L) | CLOUDS | | | | VIS | WX | WIND | X-WINDS | | |
| HACHINOHE RJSH (R25/07) | 11-15 | FEW030 BKN230 | | | | 7 | | 20005 | 4 | KT | |
| | | | | | | | | | | KT | |
| CHITOSE RJCH (R18/36) | 11-15 | FEW030 BKN180 BKN200 | | | | 7 | | 18010 | 0 | KT | |
| | TEMPO 12-15 | FEW030 BKN100 BKN150 | | | | | | | | KT | |
| MATSUSHIMA RJST (R25/07) | 11-15 | FEW030 SCT050 BKN080 | | | | 7 | | 14005 | 5 | KT | |
| | | | | | | | | | | KT | |
| YOKOTA RJTY (R36/18) | 11-15 | SCT020 BKN030 BKN100 | | | | 7 | VCSH | 18015G25 | 0 | KT | |
| | | | | | | | | | | KT | |
| HAKODATE RJCH (R12/30) | 11-15 | FEW040 BKN200 | | | | 7 | | 04005 | 5 | KT | |
| | | | | | | | | | | KT | |
| AOMORI RJSA (R06/24) | 11-15 | FEW040 BKN200 | | | | 7 | | 04005 | 2 | KT | |
| | | | | | | | | | | KT | |
| ALT WX > 2000/3 | | ALT WX < 2000/3 TO 1000/2 | | | | ALT WX > 1000/2 and/or CROSSWINDS > 20 KTS | | | | | |

Note: This document is tailored to the customer's needs and can be altered at any time.

4.3.6. Space Weather products are gathered from the 2nd Weather Squadron, Space Weather Flight. See Chapter 6 for details.

4.3.7. Follow-Up Support. Aircrews are welcome and encouraged to contact the WF for any post-mission information and/or follow-up support. Feedback information is available in [Chapter 1](#), section 1.10.

4.3.8. During special deployments, such as an Aviation Training Relocation (ATR), forecasters will continue to provide the 13 FS and/or 14 FS with the same MEF product, unless other support has been arranged.

4.4. Mass Brief

4.4.1. The Mass Brief powerpoints will consist of satellite/radar, hazards, take-off weather data, operations areas, alternates, wave heights/sea surface temperatures, and nighttime illumination data as required.

4.4.1.1. Mass Briefs are tailored to what the 13/14 Fighter Squadrons have requested.

4.4.1.2. This will be posted on SIPRNET and WF SharePoint via NIPRNET. If there is a SIPRNET communication failure, the mass brief will be available via NIPRNET only.

4.5. MISSIONWATCH. Used to describe the process of how the WF monitors the weather for all missions. All on-site meteorological and commercial data sources may be used to accomplish this task and is the primary responsibility of the duty forecaster. It is through this method that MEF amendments or updates are accomplished. During rapidly changing weather, the WF will amend/update MEFs anytime amendment criteria are met, or at any time deemed necessary to ensure flight safety. For example, MEFs will be amended whenever a warning or advisory is issued. WF will contact the SOF and Top 3 to pass on critical changes to applicable aircrews.

4.6. Dissemination of Weather Products.

4.6.1. Joint Environmental Toolkit (JET). JET is a dissemination method used by the WF to display current observations and watches, warnings, and advisories. Audible alerts are provided to key Misawa customers of weather that might impact operations. Key customers must maintain a continuous connection during operating hours and acknowledge receipt via the JET system.

4.6.2. Weather SharePoint Page. The WF maintains a presence on SharePoint at the following address: <https://misawa.eim.pacaf.af.mil/sites/35TH%20OSS%20WEATHER%20FLIGHT/default.aspx>. Customized pages can be provided for certain Misawa customers. Users requiring tailored weather data presentations may request the WF to customize a web page to meet their routine data needs.

4.6.3. Misawa Weather Channel. The Misawa Weather Channel is channel 19 on the base cable television system. Daily 5-day forecasts and climatology are routinely available. During a severe weather event, additional information concerning weather notices may be posted, including start and end times, and precipitation amount expected. Command and Control instructions pertaining to a given weather event may be found on the Commander's Access Channel. This information will be posted as time and equipment allows.

Chapter 5

STAFF INTEGRATION FUNCTION

5.1. General. Staff services are those briefings provided primarily by WF leadership. These briefings are a specialized type of MEF focused on a particular event/audience. Examples include, but are not limited to, staff meetings, Operational Readiness Exercises (ORE), and Instrument Refresher Course (IRC) briefings.

5.2. Operational Hours. The staff weather service duty hours are Monday-Friday from 0730L-1630L. Contingency, emergency, and exercise briefings are provided as required.

5.3. Daily 35 FW Stand-up Briefs. Staff weather briefings for the 35 FW are coordinated per the 35 FW/CC schedule.

5.3.1. The 35 FW stand-up briefs will include an overview of current forecast conditions, planning weather for the next day's missions and a weekly outlook. If required, slides detailing specific events (ATR support, FS deployment planning) may be included.

5.3.2. If a typhoon is forecast to impact Misawa Air Base within 96 hours, a slide will be added with storm graphics. The official forecast will only come from the Joint Typhoon Warning Center (JTWC) and the WF will not deviate from these products unless to account for terrain, foliage, and land use data. The WF will also brief 35 FW Leadership of tropical activity that pertains to DoD assets in the PACOM AOR, as deemed appropriate.

5.4. Instrument Refresher Course (IRC)/SOF Briefings. IRC training for the 13 FS and 14 FS are conducted once a month, as coordinated with the IRC Lead. The IRC/SOF briefs will be tailored to the season and focus on local effects.

5.5. Safety Briefs. WF will provide safety briefings as requested at the quarterly flight safety brief. The safety topics will be tailored to focus on local effects such as sea fog or sea effect snow (snow bands).

5.6. Flight Information Publication (FLIP) Weather Updates. The WF is responsible for ensuring all weather information in the FLIP for Misawa AB is accurate. All weather related updates will be requested through the Airfield Management Operations FLIP Manager, 35 OSS/OSAA. The FLIP Manager will process the information to Air Force Flight Standards Agency (AFFSA/OL-D). Updates will fall in one of three categories: revisions, changes, or corrections.

5.7. Pre-Deployment Planning Briefings. The WF will provide pre-deployment weather briefings when requested for permanently assigned deploying units. The content of the briefing will vary depending on the customer's requirements. Coordination in advance with WF Leadership is required.

Chapter 6

SPACE WEATHER SUPPORT AND SERVICES

6.1. General. Misawa's mission is not heavily affected by space weather. As part of the forecast process, the WF will indicate any potential solar activity.

6.1.1. Only the flying squadrons have a requirement for space weather and this is addressed on the Mass Brief, SOFMEF, and/or DD 175-1.

6.2. Limitations. One of the biggest limitations in identifying and forecasting space weather is the lack of sensors available. Additionally, depending on the type of the storm, a solar event can reach Earth as quickly as fifteen minutes. The ability to accurately provide lead-times for significant space events is extremely limited.

6.3. Space Weather Alerts and Warnings. Misawa's missions have a wide variety of operations possibly affected by various space weather conditions (UHF and VHF communication, GPS, etc.). Broad space weather coverage over Asia is displayed on NIPRNET at

<https://weather.af.mil/confluence/display/AFWWEBSTBT/Asia+Regional+Space+Weather>
. This product and the Stop Light Chart are used to update the Space Weather portion of the Misawa MEF.

6.4. Products. Most space weather products are "now-casts" and/or very short term forecasts (6-hour increments). The duty forecaster will check the referenced websites for updated products when preparing and updating MEFs. For more information concerning these products, please contact the Misawa WF.

Chapter 7

SPECIAL MISSION REQUIREMENTS

7.1. General. This chapter contains all the specific local requirements submitted by various organizations throughout Misawa Air Base and verified by the WF leadership. The requirements will be reviewed bi-annually by the requesting unit and updated as required. If any unit requirement shall change, it is their responsibility to contact the WF leadership to request a change.

7.1.1. In general, the WF will identify severe weather and will disseminate via IWWCs. Command Post will then notify all other predetermined agencies not mentioned below.

7.1.2. Weather limitations and sensitivities are provided on Attachment 4 (for MXG) and 5 (specific customers).

7.2. Wing Safety (35 FW/SE). The WF will provide a primary and alternate representative to the Interim Safety Board, Safety Investigation Board, and/or Accident Investigation Board. Weather personnel will provide weather data for inclusion in aircraft safety reports upon request and provide weather safety briefings in conjunction with flight safety meetings.

7.3. Misawa Command Post (35 FW/CP).

7.3.1. WF provides notification of all weather WWAs via telephone in the event the IWWC system is inoperable.

7.3.2. WF notifies 35 FW/CP when the AOL is activated.

7.3.3. When requested, the WF will provide data for the CP-driven OPREP-3 report after a significant weather event.

7.4. Supervisor of Flying (SOF) Support (35 OG/OGV).

7.4.1. Upon request, the WF will provide Cooperative Weather Watch training to all new SOFs. Said training will also be outlined in the quarterly SOF training sessions.

7.4.2. In addition to support detailed in the duty priorities list, the WF will:

7.4.2.1. Brief the SOF face-to-face prior to the start of local flying and give updates to Misawa and alternate weather conditions via phone and the SOFMEF (available on SharePoint).

7.4.2.2. Provide Top 3 telephone updates prior to take-off.

7.4.2.3. Notify the SOF during flying hours for the following conditions:

7.4.2.3.1. When Misawa AB conditions (actual or forecast) for flying unexpectedly deteriorate or improve through the pilot weather categories below:

7.4.2.3.1.1. Cat A – 200 feet / ½ statute miles (SM) (Published ILS approach minimums) PAR approach: 100 feet / ¼ SM.

7.4.2.3.1.2. Cat B – 300 feet / 1 SM.

7.4.2.3.1.3. Cat C – 500 feet / 1 ½ SM.

7.4.2.3.1.4. Cat D – 700 feet / 2 SM.

7.4.2.3.1.5. Cat E – 1,500 feet / 3 SM.

7.4.2.4. SOF designated alternates:

7.4.2.4.1. Ceiling 1000 feet and visibility 2 SM sets a median altitude for standard divert locations and is approved for depiction on the MEF by the 35 OG/CC. The 35 FW/SOF will establish the current alternate IAW criteria set in AFI 11-202V3: The worst weather conditions for ETA 1 hour, to include TEMPO conditions (except those caused by thunderstorms, rain, or snow showers), will meet or exceed a ceiling of 1,000 ft., or 500 ft. above the lowest compatible minimum, whichever is higher; and a visibility of 2 SM or 1 SM above the lowest compatible minimum, whichever is higher.

7.4.2.5. Additional SOF requirements:

7.4.2.5.1. Issuing or canceling a weather WWA.

7.4.2.5.2. Thunderstorms enter or exit a 30 NM radius of Misawa AB (Lightning within 5NM potential).

7.4.2.5.3. PIREPs containing significant weather are received.

7.4.2.5.4. If Draughton Range is being used and ceiling/visibility decrease below/above 1500/3.

7.4.2.5.5. 35 knots or greater sustained surface winds are observed in any Military Operating Area (MOA), Misawa, or alternate airfield.

7.4.2.5.6. Wave heights within the operating areas are forecast >10 feet and/or sustained surface winds >25 knots over water.

7.4.2.5.7. Reports of volcanic ash within the local flying area.

7.5. 35th Civil Engineer Squadron (35 CES).

7.5.1. The WF will:

7.5.1.1. During snow season (approximately 15 Nov – 31 Mar) provide freezing precipitation/snow forecasts to 35 CES/CEOHP (snow control). This will be produced Monday – Friday prior to 2000L and will be reissued throughout the day when moderately to significantly changed weather conditions warrant an update.

7.5.1.2. Provide input for chemical downwind messages (CDMs) and effective downwind messages (EDM) for Misawa AB within the first hour of the Chemical, Biological, Radiological, and Nuclear (CBRN) control center activation.

7.5.1.2.1. The 35 CES/EM, Emergency Management (EM), uses the Joint Effects Model (JEM) for CBRN hazard prediction plumes. Due to the limited availability of model support for the Japan region from DTRA, the 35 CES/EM flight uses CDM data from the WF for inclusion into these models. If more weather data is needed, 35 CES/EM will call the WF for current weather or short term forecasts. Since the 35 CES/EM flight does not use a specific forecast model, the WF will give them data

from the 17 OWS MOC or the JASDF forecast. The WF will provide CDM's from the 17th OWS webpage when requested by 35 CES/EM.

7.5.1.3. Upon request provide 35 CES/EM with prevailing weather (average high and low temperature, wind speed, wind direction, etc.).

7.5.1.4. Upon request provide hourly rainfall totals to flood control personnel during periods of forecast heavy rainfall.

7.5.1.5. In FPCON Charlie and higher or requested, provide 35 CES/EM 12-hour and/or 24-hour chemical downwind messages. The WF will provide CDMs from the 17 OWS webpage.

7.5.2. Misawa Emergency Management (EM) section, (35 CES/CEX)

7.5.2.1. As requested, the WF will provide forecasted weather conditions.

7.5.3. Fire & Emergency Services (FES) Flight (35 CES/CEF).

7.5.3.1. As requested, the WF will provide forecasted weather conditions.

7.6. 35th Security Forces Squadron (35 SFS).

7.6.1. The WF will provide forecasts as requested for overnight weather conditions that may adversely affect the traffic flow of base roads (e.g., ice, snow, etc.). When the WF is closed, forecasts will be available on the WF SharePoint Airfield Weather page: <https://misawa.eim.pacaf.af.mil/sites/35TH%20OSS%20WEATHER%20FLIGHT/AIF/default.aspx>

7.7. 35th Operations Support Squadron (35 OSS).

7.7.1. Weather personnel will brief the weather portion of the Instrument Refresher Course (IRC).

7.7.2. The Mission Planning Cell (MPC) provides information regarding upcoming missions that require weather planning data.

7.7.2.1. All products provided to the MPC will state "For Planning Purposes Only."

7.7.3. WF will provide Airfield Management Operations Flight (35 OSS/OSAM):

7.7.3.1. FLIP entries, to include but not limited to operating hours, PMSV frequencies, 17 OWS contact information, airfield ceiling and visibility threshold. The WF will validate the accuracy of the information each time the FLIP is published and take immediate steps to correct erroneous data.

7.7.3.2. Any warning criteria weather events.

7.8. Wing Scheduling (35 OSS/OSO).

7.8.1. As requested, the WF will provide climatology and lunar illumination data for planning long-range sortie scheduling.

7.9. Draughton Range (DR).

7.9.1.1. DR will be notified by Command Post of all weather watches, warnings and advisories.

7.9.1.2. When requested, WF will provide Cooperative Weather Watch training to DR controllers.

7.10. 13th Fighter Squadron and 14th Fighter Squadron.

7.10.1. The WF will:

7.10.1.1. Maintain a qualified forecaster on station during scheduled flying hours.

7.10.1.2. Update the weather planning slides (i.e. Mass Brief, to include target acquisition data and/or targeting pod forecasts if required) NLT 60 minutes prior to the scheduled mass briefing time as published in WinPEX.

7.10.1.3. Provide additional planning weather data as requested.

7.11. Misawa Security Operations Center (MSOC).

7.11.1. The WF will provide standard WWA to be disseminated via the Command Post.

7.12. Naval Air Facility/PATRECONFOR 7th FLT. WF will provide the 35 FW tailored Mission Execution Forecast (MEF), and relay warnings, watches and advisories in support of USN C-12, P-3 and VAQ aircrew during 35 FW flying hours. For flight weather briefing support outside of these hours, or locations not covered in the MEF, the 17 OWS will provide DD 175-1. In the event of any confusion as to lead weather unit support, AFMAN15-129V2 will be the final authority.

Chapter 8

RESOURCE PROTECTION SERVICES

8.1. General. This chapter contains details on weather watches, warnings, and advisories (WWAs). Resource protection is accomplished through a joint effort between the 17 OWS and the Misawa WF. The 17 OWS is responsible for issuing all forecast products including weather watches and warnings via IWWC to Airfield Operations, Command Post, Maintenance Operations Center, and Misawa Emergency Management. The WF acts as the “eyes forward” for 17 OWS and is responsible for issuing all observed warnings and advisories during operational hours. The WF can issue any forecast warning if there is an immediate threat to life and/or property. In this case, the WF will back brief the 17 OWS when time permits and will also be responsible for dissemination to local supported agencies. Conversely, the WF will act as the alternate dissemination/notification source for the OWS. The goal is to provide the best possible resource protection to Misawa Air Base.

8.2. Weather Watches. A weather watch is a special notice sent to customers indicating that conditions are favorable (potential) for the development of a particular type of weather phenomena. Watches are issued for a 5 NM radius of the center point of the Misawa runway complex. Each watch will be assigned a number following the two-digit number of the current month (i.e. 06-001 would be the first watch of June). Table 8.1 contains all of the weather watches and desired lead times (DLT) issued for Misawa AB.

8.2.1. Heavy fall watch is tailored to local requirements and varies from AFMAN 15-129V1, 6 December 2011.

Table 8.1. Weather Watch Criteria and Lead Times.

| Criteria | DLT in minutes | Issued By |
|--|-----------------------|-----------|
| Tornado | As potential warrants | 17 OWS |
| Severe Thunderstorm (damaging winds \geq 50 kts and/or damaging hail \geq $\frac{3}{4}$ inches) | As potential warrants | 17 OWS |
| Damaging Winds \geq 50 knots (not associated with Thunderstorms) | As potential warrants | 17 OWS |
| Heavy Snow \geq 8 inches in 12 hours | As potential warrants | 17 OWS |
| Freezing Precipitation (any intensity) | As potential warrants | 17 OWS |
| Heavy Rain \geq 2 inches in 12 hours | As potential warrants | 17 OWS |
| Blizzard Conditions (Duration \geq 3 hrs, wind or gusts \geq 30 kts, falling and/or blowing snow with visibility \leq $\frac{1}{4}$ mile visibility/0400 meters) | As potential warrants | 17 OWS |
| Lightning within 5 NM | 30 | 17 OWS |

8.3. Weather Warnings. Weather warnings are special notices sent out to customers alerting them that a predefined weather event, which will pose a threat to life or property, is expected to occur. Warnings are issued for a 5 NM radius of the center-point of the Misawa AB runway complex. Each warning will be assigned a number following the two-digit number of the current month (i.e. 06-001 would be the first warning of June). Forecast warnings and desired lead times are contained in Table 8.2.

8.3.1. Heavy Snowfall warning is tailored to local requirements and varies from AFMAN 15-129V1, 6 December 2011.

8.3.2. The Sandstorm warning is not required by local customers and is not included in the table below.

Table 8.2. Weather Warning Criteria and Lead Times.

| Criteria | DLT in minutes | Issued By |
|--|----------------|-----------|
| Tornado or Funnel Cloud | 30 | 17 OWS |
| Severe Thunderstorms (damaging winds \geq 50 kts and/or damaging hail \geq $\frac{3}{4}$ inches) | 120 | 17 OWS |
| Moderate Thunderstorm (strong winds 35-49 kts and/or large hail \geq $\frac{1}{4}$ inches but $<$ $\frac{3}{4}$ inches) | 90 | 17 OWS |
| Damaging Winds \geq 50 knots (Not associated with thunderstorms) | 120 | 17 OWS |
| Strong Winds 35-49 kts (Not associated with thunderstorms) | 90 | 17 OWS |
| Heavy Snow \geq 8 inches in 12 hours | 90 | 17 OWS |
| Freezing Precipitation (Any Intensity) | 90 | 17 OWS |
| Heavy Rain \geq 2 inches in 12 hours | 90 | 17 OWS |
| Blizzard Conditions (Duration \geq 3 hrs, wind or gusts \geq 30 kts, falling and/or blowing snow with visibility \leq $\frac{1}{4}$ mile visibility/0400 meters) | 90 | 17 OWS |
| Lightning within 5 NM | Observed | WF |
| The observed lightning warning will be issued/cancelled by the 17 OWS when the WF is closed and capability exists. | | |

8.4. Observed Weather Warnings. Lightning warnings are the only type of observed warnings issued on Misawa AB. They extend 5 NM in all directions from the airfield. Lightning warnings are not issued until lightning is observed, heard, sensed by lightning detection, or reported by the Japan Air Self Defense Force, Weather Squadron.

8.4.1. The lightning warning will remain valid until lightning has not occurred in the area for at least 15 minutes.

8.5. Forecast and Observed Weather Advisories. A weather advisory is a special notice sent to customers alerting them that a predefined weather phenomenon, which may impact operations, is forecast to occur at Misawa AB. An observed weather advisory is a special notice sent to customers alerting them that a predefined weather phenomenon, which may impact operations, is occurring on Misawa AB. Forecast and observed weather advisories can be found in Table 8.3.

Table 8.3. Forecast and Observed Weather Advisories.

| Criteria | DLT in minutes | Issued By |
|---|----------------|-----------------|
| Surface Winds 25-34 knots | 30 | 17 OWS |
| Crosswind 15-19 knots | Observed | WF |
| Crosswind 20-25 knots | Observed | WF |
| Crosswind 26-34 knots | Observed | WF |
| Crosswind ≥ 35 knots | Observed | ¹ WF |
| Ice FOD A/B | Observed | ¹ WF |
| ² Lightning 5-30 NM | Observed | ¹ WF |
| Low-Level Wind Shear Below 2000ft AGL | Observed | ¹ WF |
| ³ Icing (Light or greater in intensity) within 50 NM | 30 | ¹ WF |
| ³ Turbulence (Moderate or greater in intensity) within 50 NM | 30 | ¹ WF |
| ³ Winds ≥ 30 kts | Observed | ¹ WF |
| <p>*Issued by the Weather Flight if the OWS is unable to transmit.</p> <p>¹Advisories will be issued/cancelled by the 17 OWS when the WF is closed.</p> <p>²Lightning within 5-30 NM advisory is added due to a needed increase alert time by the Maintenance Operations Center, safety requirement requested by the Mobile Mine Assembly Detachment 12 and generator spin-up requirements for the Misawa Security Operations Center.</p> <p>³Icing, Turbulence, and Winds ≥ 30 kts is issued only when RQ-4 is forward deployed to Misawa. Turbulence will be issued based on Category III aircraft.</p> <p>Notes:</p> <p>1. Ice FOD criteria are listed below:</p> <p>Ice FOD A</p> <ul style="list-style-type: none"> - Temperature is $< 45^{\circ}\text{F}$ (7°C) but $> 20^{\circ}\text{F}$ (-7°C) with precipitation occurring. - Dewpoint depression $< 9^{\circ}\text{F}$ (5°C); and the temperature $< 45^{\circ}\text{F}$ (7°C) but $> 25^{\circ}\text{F}$ (-4°C). <p>Ice FOD B</p> <ul style="list-style-type: none"> - The temperature is $< 45^{\circ}\text{F}$ (7°C) with standing water or a mixture of water with ice or snow within the immediate proximity of the engine inlet. - The weather flight does not have the capability to determine the proximity of water or water mixture to the engine inlet. Therefore the SOF, with the aid of the pro-super, will determine if the HAS and taxi areas are clear of water, ice, or snow. - The SOF will inform WF if an Ice FOD advisory is needed based on the immediate proximity of hazards to the engine inlet. | | |

8.6. Upgrades and Downgrades. Advisories and warnings will be upgraded (e.g. strong winds to damaging winds) or downgraded as required. Upgrades should meet the desired lead-times specified above. **Only one forecast warning may be in effect at a time except when a tornado or observed lightning has been issued.**

8.7. Amendments. Amendments to weather warnings and watches will only be issued to change the valid time and will be issued before the original watch or warning expires. New warnings and watches will be issued for any changes in weather criteria.

8.8. Cancellation. Warnings and watches may be cancelled when the weather phenomena are no longer occurring or expected to occur. However, if not cancelled, they will expire at the end of the valid period. Observed advisories will be cancelled when the criteria is no longer occurring and is not expected to occur again in the next hour.

8.9. Toxic Corridor. Per AFI10-2501_35 FW Supplement, Air Force Emergency Management (EM) Program Planning and Operations, toxic corridor responsibilities lie with the Civil Engineering Squadron (CES) Readiness & Emergency Management (REM) Flight and Fire & Emergency Services (FES) flight. The WF will provide any weather information REM and/or FES require.

8.10. Severe Weather Action Plan (SWAP). The SWAP is in place to ensure sufficient personnel are available during potential/actual severe weather events or during meteorological or operational events critical to mission success. For the purpose of these procedures, severe weather is defined as tornado and severe thunderstorms.

8.10.1. The Severe Weather Action Team (SWAT) will usually consist of a team leader and additional team members consisting of the WF Leadership, depending on availability. WF Leadership will respond ASAP and will assume SWAT leader duties upon arrival. The WF will perform SWAP responsibilities as defined in AFMAN15-129V2, *Aerospace Weather Operations-Processes and Procedures*, 17OWS IDP, and this publication.

8.10.1.1. If the WF is closed (limited duty after hours, weekends, federal holidays), after notification by the 17 OWS, the stand-by forecaster (team leader) will respond accordingly to the table below, quickly evaluate the situation, and then notify WF Leadership.

8.10.1.2. If the WF is open, WF Leadership will be immediately notified and will determine the appropriate actions.

8.10.2. While not in SWAP criteria, in the rare case of Tropical Cyclones (TC), the WF Leadership will immediately notify the CP and evaluate the TC impact within 96 hours of affecting Misawa AB (e.g. Misawa is forecasting within the 35 knot radius by 96 hours on the Joint Typhoon Warning Center (JTWC) official warning). The WF may begin 24/7 operations when the Tropical Cyclone Condition of Readiness (TCCOR) Authority (see Attachment 6 for TCCOR Criteria and Destructive Winds), the FW/CC, initiates TCCOR 2. Due to the complex nature of TCs, WF Leadership will determine the best course of action to address weather support and advise 35 FW Leadership. The WF Leadership will also stress the accuracy of TC forecasts beyond 96 hours is subject to a wide margin of error.

8.10.2.1. The WF may provide additional slide(s) to 35 FW Public Affairs so they may post on the information on the Misawa website, Facebook, or other approved social networking sites, and the Commander's Access Channel to ensure that the Misawa community is informed.

Table 8.4. Conditions Requiring Notification/Activation of SWAT standby member.

| call criteria/Threshold | sired notification time | WS action | WF action |
|------------------------------------|--|---|------------------|
| rnadoes/Waterspout | Watch/Warning issued | Implement OWS SWAP. Notify WF using stand-by roster. | plement SWAP |
| vere Thunderstorms | Watch/Warning issued | Implement OWS SWAP. Notify WF using stand-by roster. | plement SWAP |

8.10.3. Activation.

8.10.3.1. When the 17 OWS issues a WWA that meets SWAP criteria, 17 OWS will notify the duty forecaster at DSN 226-3065 or the stand-by forecaster during limited duty hours to start the SWAP procedures. If unable to reach the primary stand-by forecaster, 17 OWS will notify the Misawa Command Post at 315-226-9899 to contact WF Leadership. Once the SWAP POC has been notified, the implementation of the SWAP will begin. The duty/standby forecaster will discuss the meteorological situation, manning requirements, and the recall of additional personnel with WF Leadership. If deemed necessary, the SWAT member will report to the weather station as soon as possible after notification by the duty/stand-by forecaster. Once the SWAT member has arrived, they will assist in evaluating the situation, determine the need and availability to recall additional personnel, and execute the SWAP duties and responsibilities in Table 8.5.

Table 8.5. SWAP Duties and Responsibilities.

| Duty Forecaster | |
|------------------------|--|
| 1. | Notify and recall SWAT member. |
| 2. | Continue to perform a basic weather watch. |
| 3. | Constantly coordinate with 17 OWS on the issuance of watches/warnings. |
| 4. | Notify appropriate agencies of the issuance of watches/warnings. |
| 5. | Conduct a concise forecast discussion of the current situation to apprise SWAT team chief upon their arrival. |
| 6. | Issue observed warnings or advisories. |
| 7. | Review PIREPs, SIGMETs, and other products that are applicable. |
| 8. | Update Mission Execution Forecasts (MEF) as needed. |
| 9. | Work closely with the SWAT leader. All him/her to accomplish tasks which will free the duty forecaster to handle critical tasks such as; WWA issuance and notification, MEF amendments and coordination with the 17 OWS. |
| 10. | Provide inputs to post-event OPREP-3 report (if required). Archive data for/and perform a forecast review, if required. |
| SWAT Member | |
| 1. | Evaluate the situation and report to the station as necessary. Determine if the situation warrants additional personnel. |
| 2. | Initiate and maintain an events log as time permits IAW local policy. |
| 3. | Upon arrival, receive initial forecast discussion from duty forecaster. |
| 4. | Ensure duty positions are delegated and members are performing assigned tasks. |
| 5. | Ensure the following tasks are accomplished on a recurring basis. |
| | a. Recall additional personnel as needed, if available. |
| | b. Adjust duties as deemed necessary. |
| | c. As requested, keep senior base leadership, command post, and customers informed of the latest developments. |
| | d. Ensure all applicable WWAs are issued and notification has been accomplished. |
| | e. Review all forecast products for accuracy and horizontal consistency. |
| | f. Provide meteorological expertise and guide decision making. |
| 6. | Monitor PMSV |
| 7. | Conduct post-event review and discussion to provide team members with feedback (positive and negative) |
| 8. | Consolidate inputs and coordinate with 17 OWS for OPREP-3 report and provide to 35 FW/CP, if required. |

8.10.3.2. Upon arrival at the weather station, the SWAT member, time permitting, will conduct a meteorological conference (METCON) with the 17 OWS Forecaster.

8.11. Severe Weather Damage Reporting/OPREPs. IAW AFMAN 15-129V2, *Air and Space Weather Operations- Exploitation*, the WF will query base agencies to collect the area impacts of severe weather occurrence. The WF will coordinate with the 35 FW/CP for weather related OPREP-3 and provide the CP any pertinent base information. The CP, in turn, will provide the WF with a copy of any weather related OPREPs. The WF will provide damage reports and OPREP-3 reports to the OWS and MAJCOM as soon as possible. 35 FW/CP will receive the following information in the OPREP-3 listed in Table 8.6.

Table 8.6. Items Required for OPREP-3 Report.

| # | Item |
|----|---|
| 1. | The actual severe weather experienced including: |
| | a. Location. |
| | b. Date and Time. |
| | c. Phenomenon. |
| 2. | Forecast that was valid at the time of occurrence. |
| 3. | Any WWAs issued including. |
| | a. Issue date and time. |
| | b. Valid time. |
| | c. Actual lead-time. |
| | d. Customers desired lead-time. |
| 4. | Operational status of meteorological equipment prior to the severe weather event. |

8.12. Chemical Downwind Messages (CDM). IAW AFMAN 15-129V2, *Air and Space Weather Operations – Exploitation*, upon request from any agency, 17 OWS will provide CDMs. The WF will then gather the information from the 17 OWS and provide this data to the requesting agency.

8.13. Emergency/Crisis Action Responses.

8.13.1. In the event of an aircraft accident, the WF will provide the following products:

8.13.1.1. An immediate update to the SOF using the JASDF A-SPECL.

8.13.1.2. Satellite, radar, hazard charts and all applicable and available terrestrial and space weather products used to produce the brief.

8.13.1.3. The TAF, MEF, Mass Brief, PMSV log, warnings, watches, and advisories that were valid during the aircraft accident.

8.13.1.4. Request the 17th OWS do a data save to cover data applicable to the event. Also perform a local data save using JET. Time will be the same as above.

8.13.1.5. JWS observations and lightning data (will use internet if JWS is down).

8.13.1.6. Detailed statement concerning weather information briefed to the aircrew.

8.13.1.7. WF will consolidate the above products, once complete, and either burn the information to a disk or copy it to a password protected folder to preserve mishap investigation evidence.

8.13.2. In the case of natural disasters (e.g. earthquake, tsunami), the WF will follow the actions under the Installation Emergency Management Plan 10-2 (IEMP 10-2). In addition, the WF will provide continuous resource protection and “eyes forward” for the 17 OWS.

Chapter 9

WEATHER INFORMATION DISSEMINATION

9.1. General. Forecasts, observations, and weather alerts (i.e. WWAs) are only useful if the customers have access to them. It is incumbent on all weather personnel to ensure dissemination through timely and proper notification. Due to the unique partnership between the Japan Air Self Defense Force and the 35 OSS WF Flight, weather alerts are disseminated separately among JASDF and the WF; time permitting, before any WWA is disseminated, METCONs may exist to ensure consistency between the two agencies. The Command Post, Airfield Management Flight, and Maintenance Operations Center will receive notification via the IWWC system, JET and/or a telephone call of issuance of a warning, watch, or advisory.

9.2. Dissemination Systems and Backups.

9.2.1. The Weather Flight currently uses the Joint Environmental Toolkit, JET, as its primary disseminating tool. The WF will follow backup dissemination procedures documented in the WF SOPs in the event that JET is inoperative.

9.3. Dissemination and Backup Procedures.

9.3.1. Weather Watches, Warnings, and Advisories (WWA). WWAs will be disseminated via JET. If it is out of service, the WF will call each required agency, to pass the information. Further dissemination by Airfield Management Operations and the Command Post are as follows:

9.3.1.1. Airfield Management Operations. AMOPS will further relay all weather warnings via the secondary crash net to following organizations: Fire Department, CP, Weather, MOC, Security Forces, Emergency Management, Wing Safety, Public Affairs, EOD, Vehicle Operations, Hospital, Transient Alert, Navy Duty Desk, MSG/CC, and Barrier Maintenance.

9.3.1.2. 35 FW/CP. The Command Post disseminates all weather watches, warnings, and advisories by telephone. All other agencies will be contact via email. For severe weather phenomenon, Command Post contacts all agencies required to respond. Attachment 6 indicates the agencies that are contacted by CP.

9.3.1.3. Lightning Warnings. All lightning warnings are disseminated to the base populace via the Giant Voice in addition to AMOPS and the CP to ensure all members on base are prepared for inclement weather.

9.3.1.4. Misawa Weather Channel. The Weather Channel, on Channel 19 of the base cable system, will start and end times and updates may be added to the normal weather channel slides during weather warnings during normal duty hours. This information will be posted as time and equipment allows.

Chapter 10

OWS/WF BACKUP SUPPORT

10.1. General. There are many different scenarios that could cause an interruption of service from either the 17 OWS or the WF. This chapter briefly describes how weather services will be provided should any events occur.

10.2. 17 OWS. Per the Installation Data Plan (IDP) between 35 OSS WF and 17 OWS, when weather operations at 17 OWS are interrupted (e.g. power outage, natural disaster, etc.) associated weather watch, warning, and advisory responsibilities will be transferred to the WF until such time as the 17 OWS is postured to resume operations.

10.3. WF. For standard evacuations, support will resume from the alternate operations location (Bldg 918) with 17 OWS assuming responsibilities during any interim period. For longer interruptions, the WF will coordinate required support with other organizations.

Chapter 11

RECIPROCAL SUPPORT

11.1. General. This chapter contains all of the specific local requirements submitted by various organizations throughout Misawa AB and verified by the WF leadership. The requirements will be reviewed annually by the requesting unit and updated as required. If the MEF, watch, warning, or advisory does not cover a specific local weather requirement, extra effort will be made (time permitting) to contact the individual unit to advise of the condition. In turn, the unit is responsible for contacting the WF should their requirements change.

11.2. Misawa Command Post will:

11.2.1. Notify critical agencies within 15 minutes after receiving the warning, watch or advisory based on Attachment 6.

11.2.2. Notify all other agencies not directly supported by the WF of the WWA. Command Post contacts 24 hour and emergency response agencies via telephone. All other agencies will be contact via email. For severe weather phenomenon, Command Post contacts all agencies required to respond.

11.2.3. Initiate GIANT VOICE for lightning watch/warning within 5 NM and other significant weather events during flying/airfield operations.

11.2.4. Notify base when TCCOR 2 or higher has been established by the 35 FW/CC.

11.3. Supervisor of Flying (SOF) will:

11.3.1. Receive a face-to-face weather briefing from the duty forecaster prior to the beginning of a SOF shift.

11.3.2. Notify weather personnel if any of the following occur:

11.3.2.1. Significant changes in ceiling/visibility.

11.3.2.2. Lightning or thunder occurs.

11.3.2.3. Start of precipitation.

11.3.2.4. Solicit PIREPs for local area, ranges, and MOAs and pass any PIREPs to the forecaster within 5 minutes of receipt.

11.3.2.5. Notify weather personnel when 35 FW flying has added/cancelled flights, diverted or complete for the day.

11.4. 35th Aerospace Medicine Squadron/Bioenvironmental Engineering will:

11.4.1. Act as the OPR for all issues regarding heat index and wind chill. They will take wet bulb global temperature (WBGT) measurements, as required, and calculate the heat index.

11.4.2. Obtain outside ground temperature and wind speed from the WF and determine the Wind Chill Temperature and Frostbite Risk Level (FRL) using Table 5 from 35 FWI 48-105, *Prevention of Thermal Stress*. Bioenvironmental Engineering (BE) will notify the installation command post of the resulting FRL. The command post shall relay the

information using the base communication networks as needed. Workplace supervisors shall implement personnel protective measures as listed in 35 FWI 48-105, Table 6.

11.5. 35th Civil Engineer Squadron will:

11.5.1. Notify the WF of activation of the CBRN control center and coordinate receipt of CDMs/EDMs.

11.5.2. Closely coordinate with the WF during forecasted periods of heavy rain to assess flooding potential. Contact CP during limited duty hours to recall weather personnel for required information.

11.5.3. Coordinate with the WF on annual updates to the Misawa AB snow removal plan.

11.6. 35th Communications Squadron will:

11.6.1. Provide PMSV radio support as it is deemed mission critical pieces of equipment. It will always be logged out as a “RED” outage.

11.6.2. Provide 24-hour assistance for base communication network outages as internet and computer communications are critical assets for weather operations.

11.7. Airfield Management Operations Flight will:

11.7.1. Notify the WF of any aircraft mishap via the secondary crash phone.

11.7.2. Disseminate Warnings received on IWWC IAW Quick Response Checklists.

11.7.3. Pass the current runway heading, Runway Surface Condition (RSC), and Runway Condition Readings (RCR) to the duty forecaster.

11.7.4. Notify the WF of any ALS (Airfield Lighting System) equipment status changes that restrict or relax airfield visibility and ceiling minimums.

11.7.5. Invite the WF to the quarterly Airfield Operations Board (AOB) according to AFI13-204, Volume 3.

11.7.6. Maintain or arrange for maintenance of all meteorological equipment and weather support communications that have been properly approved, procured, and installed. The WF understands in the event of conflicting maintenance priorities, maintenance technicians will follow the established restoral priority list.

11.8. Wing Scheduling will:

11.8.1. Provide WF the ability to access the daily flying schedule via Windows Patriot Excalibur (WinPEX). If WinPEX is inoperative the 13 FS and 14 FS will e-mail the daily flying schedule to the WF.

11.9. Draughton Range will:

11.9.1. Notify WF Leadership of any significant meteorological equipment problems/outages.

11.9.2. Notify the WF during flying hours when the following weather conditions occur:

11.9.2.1. Significant changes in ceiling/visibility.

11.9.2.2. Lightning or thunder occurs.

11.9.2.3. Pass any PIREPs within 5 minutes or as time allows to the forecaster and solicit PIREPs for the range.

11.10. The 13 FS and 14 FS will:

11.10.1. Notify the forecaster (as soon as practical) of weather conditions over the target/operation areas.

11.10.2. Pass PIREPs via the TOP 3 to the duty forecaster within 5 minutes of receipt.

11.10.3. During exercises and contingencies, pass target weather to WF forecasters during mission debriefs.

11.10.4. Immediately alert the WF to any short-notice changes to the scheduled brief time that would affect when the weather mass brief is due.

11.10.5. Notify WF Leadership, at least 24 hours in advance, of special briefings and/or missions, and assign a POC to coordinate weather support.

11.10.6. Notify WF Leadership, at least 24 hours in advance, of additional weather support for missions outside the normal 35 FW flying hour schedule, e.g., weekend missions supporting an ATR.

11.10.7. Ensure WinPEX is updated with mass briefing times. This is critical to ensure the WF can adequately schedule and provide required support.

11.10.8. Notify the WF of all upcoming deployments or exercises.

11.11. American Forces Network (AFN) – Misawa will:

11.11.1. When instructed by the Command Post, run warnings of only severe weather (tornadoes, damaging winds, heavy snow, heavy rain, freezing precipitation, blizzard conditions and TCCOR.) AFN Misawa will run a crawl on television and special announcement on radio every 15 minutes until cancelled by the Command Post. The Command Post will notify AFN by calling the numbers on the latest recall roster or, if no answer, will contact the affiliate superintendent on his or her cell or home phone.

11.12. Naval Air Facility (NAF) Misawa will:

11.12.1. When contacted by the Command Post, relay weather warnings, watches, advisories, and TCCORs to all Navy commands on Misawa.

11.13. 17th Operational Weather Squadron.

11.13.1. The 17 OWS provides forecast, watch, warning, and advisory (WWA) support to Misawa AB and Shariki Comm Site. The specific details of the support are found in the 35 OSS-17 OWS Installation Data Plan.

11.13.2. Limited Outages. Limited outages are defined as 0 to 72 hours in length.

11.13.2.1. Upon notification from 17 OWS, the Misawa Weather Flight will take over WWA responsibilities for Misawa AB and/or Shariki Comm Site and work in conjunction with the 17 OWS to ensure resource protection is not disrupted.

11.13.2.2. If a JET or FMQ-19 outage occurs, the OWS will notify the Weather Flight personnel on duty or the standby forecaster. The Weather Flight will then follow

troubleshooting procedures and/or document outage with appropriate agencies. The standby forecaster will not remain on duty for a FMQ-19/JET outage.

11.13.3. Long-term Outages. Long-term outages are defined as greater than 72 hours in length. For outages greater than 72 hours, the Misawa WF will continue to assume responsibilities for resource protection for Misawa AB and Shariki Communications Site.

11.13.4. Shariki Contact Information:

11.13.4.1. Primary Contact: Raytheon Shift Lead - DSN 315-226-7616

11.13.4.2. Secondary Contact: MDNT-B Shift Lead - DSN 315-226-7675

WILLIAM D. BOWMAN, Colonel, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

All applicable DoD Flight Information Publications (FLIPs)

Applicable 11 Series AFIs, *Flying Operations*, pertaining to specific aircraft Operations Procedures

A1-C12BM-NFM-000, *NATOPS Flight Manual Navy Model UC-12BFM Aircraft*

AFDD 1, *Air Force Basic Doctrine, Organization, and Command*, 14 Oct 2011

AFI 10-206, *Operational Reporting*, 11 Jun 2014

AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, IC3, 29 Apr 2013

AFI 11-202V3, *General Flight Rules*, 7 Nov 2014

AFI 15-128, *Air Force Weather Roles and Responsibilities*, 7 Feb 2011

AFI 25-201, *Support Agreement Procedures*, 18 Oct 2013

AFI 33-324, *The Information collections and Reports Management Program: Controlling Internal, Public, and Interagency Air Force Information Collections*, 6 Mar 2013

AFMAN 33-363, *Management of Records*, 1 Mar 2008

AFI 35-101, *Public Affairs Responsibilities and Management*, 18 Aug 2010

AFH 11-203V1, *Weather for Aircrews*, 12 Jan 2012

AFMAN 15-111, *Surface Weather Observations*, 27 Feb 2013

AFMAN 15-124, *Meteorological Codes*, 28 Feb 2013

AFMAN 15-129V1, *Air and Space Weather Operations – Characterization*, 6 Dec 2011

AFMAN 15-129V2, *Air and Space Weather Operations – Exploitation*, 7 Dec 2011

AFOOSH Standard 91-100, *Aircraft Flight Line - Ground Operations and Activities*

AFPD 15-1, *Air Force Weather Operations*, 19 Feb 2010

AFPAM 48-151, *Thermal Injury*, 18 Nov 2002

IEMP 10-2, *Installation Emergency Management Plan*, 09 January 2015

Installment Data Plan (IDP) between 17th Operational Weather Squadron and 35th Operations Support Squadron, Weather Flight, 16 Jun 2014

Joint Publication 3-59, *Joint Doctrine, Tactics, Techniques, and Procedures for Meteorological and Oceanographic Operations*, 7 Dec 2012

MOUI-3005, *Memorandum of Understanding for Airfield Operations between 432d Tactical Fighter Wing and Japan Air Self Defense Force*, 06 Dec 1988

PACAFI 15-101, *Weather Support for PACAF*, 23 Apr 2014

USFJINST 15-4001, *Tropical Cyclone Conditions of Readiness (TCCOR)*, 01 Mar 2015

Prescribed Forms

No forms prescribed

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 Sep 2009

Abbreviations and Acronyms

AFW—Air Force Weather

AFWA—Air Force Weather Agency

AIREP—Air Report

AMD—Amendment

AMOPS—Airfield Managements Operations

AOB—Airfield Operations Board

AO—Area of Operations

AOL—Alternate Operating Location

AOR—Area of Responsibility

AOS—Alternate Observing Site

ATC—Air Traffic Control

BWW—Basic Weather Watch

C2—Command and Control

CBRN—Chemical, Biological, Radiological, and Nuclear

CDM—Chemical Downwind Message

CONOPS—Concept of Operations

DLT—Desired Lead-time

EDM—Effective Downwind Message

EM—Emergency Management

FES—Fire & Emergency Services

FLIP—Flight Information Publication

FMQ-19—Aviation Weather Equipment

FMQ-22—Aviation Weather Equipment

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IDP—Installation Data Plan

IFR—Instrument Flight Rules
IRC—Instrument Refresher Course
JASDF—Japan Air Self Defense Force
JET—Joint Environmental Toolkit
JTWC—Joint Typhoon Warning Center
JWS—Joint Weather System
LAN—Local Area Network
LLWS—Low Level Wind Shear
MAJCOM—Major Command
MEF—Mission Execution Forecast
MEFP—Mission Execution Forecast Process
METSAT—Meteorological Satellite
METAR—Aviation Routine Weather Report
METCON—Meteorological Conference or Discussion
METOC—Meteorology and Oceanography
METWATCH—Meteorological Watch
MISSIONWATCH—Mission Meteorological Watch
MOA—Military Operating Area
MOC—Maintenance Operations Center
NAF—Naval Air Facility
NCOIC—Noncommissioned Officer in Charge
NIPRNET—Non-secure Internet Protocol Router Network
NOTAM—Notice to Airmen
OPLAN—Operation Plan
OPREP—Operational Report
OPSEC—Operations Security
OSS—Operations Support Squadron
ORM—Operational Risk Management
OWS—Operational Weather Squadron
PACAF—Pacific Air Force
PIREP—Pilot Weather Report
PMSV—Pilot-to-Metro Service

RCR—Runway Condition Reading
RSC—Runway Surface Condition
SIPRNET—Secure Internet Protocol Router Network
SM—Statute Mile
SOF—Supervisor of Flying
SOP—Standing Operating Procedure
SPECI—Aviation Selected Special Weather Report
SWAP—Severe Weather Action Plan
SWAT—Severe Weather Action Team
TAF—Terminal Aerodrome Forecast
TAWS—Target Acquisition Weather Software
TCCOR—Tropical Cyclone Condition of Readiness
WF—Weather Flight
WSD—Weather Support Document
WWA—Watches, Warning and Advisory

Terms

METWATCH—A deliberate process for monitoring the terrestrial weather or space environment in an area or region. The purpose of a METWATCH is to identify when and where observed conditions significantly diverge from forecast conditions and determine courses of action to update or amend a forecast product or group of products and notify designated agencies.

Mission Execution Forecast Process (MEFP)—A systematic, repeatable process for tailoring weather products and forecasting mission-limiting meteorological parameters and providing decision quality environmental information for an operational end user. This process provides a basic framework for fusing perishable meteorological data, operational and strategic forecast products, and an understanding of the supported user's tactics which will be applied to any mission their supported user may undertake. The MEFP describes an end-to-end process incorporating management steps, forecast development, mission meteorological watch, and post-mission analysis of the information provided.

Mission Integration—The ability to understand mission platforms, equipment, and systems capabilities/sensitivities as well as mission processes (e.g., JOPP, MDMP, IPOE, ORM, COP, tactics, etc.) and inject the right information at the right time every time, enabling mitigation of environmental threats as early as possible in the mission planning process, ultimately optimizing mission execution.

Mission Profile—Describes a mission's operating platform(s), route, flight level(s), weapons systems, equipment, target(s), tactics/techniques/procedures (TTPs), and timing.

MISSIONWATCH—A deliberate process of monitoring terrestrial weather or the space environment for specific mission-limiting environmental factors that may adversely impact missions in execution. The MISSIONWATCH process is performed by WFs and WSTs and is intended to identify previously unidentified environmental threats and alert decision-makers at the operational unit and/or airborne mission commanders, enabling dynamic changes to mission profiles that may mitigate the environmental threat and optimize the chance of mission success.

Weather Flight (WF)—Weather flights, detachments, and operating locations whose primary purpose is to facilitate exploitation of the environment through integration at every step of the operations planning and execution process. The WF may be located with the supported unit on an Air Force base, Army post, remotely located in another weather unit, or at a deployed location.

Attachment 2

JASDF WEATHER OBSERVING CRITERIA

A2.1. General Information

A2.1.1. Introduction. The Japan Air Self Defense Force Misawa Weather Squadron, Air Weather Service Group, Air Support Command (JASDF Wx) is responsible for taking observations. This service is provided 24 hours a day, 365 days a year. Radar observations are taken at the discretion of the JASDF Weather duty forecaster. Surface weather observations are taken IAW JASDF Rules of Aeronautical Meteorological Observation (RAMO) Number 14, dated 08 Nov 2006, the MOUI 3005, and the published weather minimum for the airfield as determined by US Air Force TERPS.

A2.1.2. Definitions

A2.1.2.1. Hourly observation: A complete observation taken, recorded, and disseminated near the beginning of each hour containing the following elements:

A2.1.2.1.1. Time (GMT)

A2.1.2.1.2. Wind direction, speed, and character. (10 Minute average)

A2.1.2.1.3. Prevailing visibility

A2.1.2.1.4. Runway visual range (when required).

A2.1.2.1.5. Present weather and obstructions to vision.

A2.1.2.1.6. Sky condition

A2.1.2.1.7. Temperature (degrees Celsius)

A2.1.2.1.8. Dew point (degrees Celsius)

A2.1.2.1.9. Altimeter setting.

A2.1.2.1.10. Sea-level pressure (disseminated local and longline).

A2.1.2.1.11. Remarks on preceding encoded data.

A2.1.2.2. Special observations. JASDF takes and disseminates five types of special observations: SPEC-1, SPECI-2, Q-SPECI, L-SPECI, and A-SPECI. All of these are limited element observations taken for meteorological conditions specified by special criteria containing in the RAMO, criteria listed in the DoD Flight Instrument Publication (FLIP) for Misawa AB, AFMAN 15-111, AFMAN 15-129, and customer requirements (JASDF or US Forces). The 5 types are as follows:

A2.1.2.2.1. **SPECI-1:** JASDF takes and disseminates locally and longline for severe weather conditions or conditions at or below field minimums.

A2.1.2.2.2. **SPECI-2:** JASDF takes a SPECI-2 immediately for deteriorating conditions (disseminated local and longline). For improving conditions, the RAMO allows for a 10 minute delay before the observer must take and disseminate a SPECI-2. SPECI-2 marked with a ** will only be taken during runway repair.

A2.1.2.2.3. **Q-SPECI:** JASDF disseminates these locally only and records them for permanent record. JASDF does not delay for improving or deteriorating conditions marked with ***. No Q-SPECI criteria for wind, RVR, or other weather phenomena.

A2.1.2.2.4. **L-SPECI:** Virtually the same as the Q-SPECI. The difference is that the L-SPECI is shorter than the Q-SPECI observation. No L-SPECI criteria for winds. L-SPECI marked with a * will only be taken when phenomena stops.

A2.1.2.2.5. **A-SPECI:** Taken when notified of an aircraft emergency, accident, or mishap.

Table A2.1. JASDF Criteria.

| Criteria | SPECI-1 | SPECI-2 | Q-SPECI | L-SPECI | A-SPECI |
|---|---------|---------|---------|---------|---------|
| Ceilings decrease to less than 100 feet (airfield minimum) | X | X | | | |
| Prevailing visibility decreases to less than 400m (1/4SM) (field minimum). | X | X | | | |
| The runway visual range (RVR) one minute mean decreases to less than 500m (5/16SM) (field minimum). | X | X | | | |
| Ceilings decrease to less than or if below, increase to equal or exceed: | | | | | |
| - 3000 ft | | X | | | |
| - 2000 ft | | X | | | |
| - 1500 ft (USAF Cat E) | | X | | | |
| - 1000 ft | | X | | | |
| - 800 ft | | X | | | |
| - 700 ft (USAF Cat D) *** | | X | X | | |
| - 600 ft (FLIP, circling) | | X | | | |
| - 500 ft (USAF Cat C) | | X | | | |
| - 400 ft | | X | | | |
| - 300 ft (USAF Cat B) | | X | | | |
| - 200 ft | | X | | | |
| - 100 ft (PAR Mins) | | X | | | |
| A layer of cloud increases from a scattered (no ceiling) condition to a broken or overcast condition or vice versa. | | X | | | |
| Prevailing visibility decreases to less than or if below, increases to equal or exceed: | | | | | |
| - 8000m (5SM) (JASDF requirement). | | | X | | |
| - 5000m (3 1/8SM) (Equivalent distance for USAF Cat E) | | X | | | |
| - 3200m (2SM) (USAF Cat D) | | X | | | |
| - 2600m (1 5/8SM) (Equivalent distance for USAF Cat C) | | X | | | |
| - 2400m (1 1/2SM) (USAF Cat C) | | | X | | |
| - 2000m (1 1/4SM) | | X | | | |
| - 1800m (1 1/8SM) ** | | X | | | |
| - 1600m (1SM) (USAF Cat B) | | X | X | | |
| - 1500m (7/8SM) | | X | | | |

| | | | | | |
|--|---|---|---|----|--|
| - 1200m (3/4SM) | | X | | | |
| - 800m (1/2SM) | | X | | | |
| - 600m (3/8SM) (JASDF requirement) | | | X | | |
| - 400m (1/4 SM) (PAR Mins) | | X | | | |
| Runway Visual Range (RVR): When the one minute mean decreases to less than or if below, increases to equal or exceeds: | | X | | | |
| - 1600m (1SM) | | X | | X | |
| - 1500m (7/8SM) | | X | | X | |
| - 1200m (3/4SM) | | X | | X | |
| - 800m (1/2SM) | | X | | X | |
| - 700m (7/16SM) | | X | | X | |
| - 600m (3/8SM) | | X | | X | |
| - 500m (5/16SM) | | X | | X | |
| - 400m (1/4SM) | | X | | X | |
| Wind condition. When the wind: | | | | | |
| Direction changes by 30 degrees or more and one or more of the following criteria is met: | | | | | |
| - Before wind direction changes by 30 degrees or more, a mean wind speed of 15 knots or more. | | X | | | |
| - After wind direction changes by 30 degrees or more, a mean wind speed of 15 knots or more. | | X | | | |
| - After wind direction changes by 30 degrees or more, the maximum wind speed is 20 knots or more. | | X | | | |
| Mean wind speed changes by 10 knots or more and one of the following criteria is met: | | | | | |
| - Before a mean wind speed changes by 10 knots or more, the mean wind speed is 25 knots or more. | | X | | | |
| - After a mean wind speed changes by 10 knots or more, the mean wind speed is 25 knots or more. | | X | | | |
| Maximum speed changes by 10 knots or more when the maximum is 20 knots. | | X | | | |
| Maximum speed changes from less than 20 knots to more than 20 knots or vice versa. | | X | | | |
| When the following weather phenomena start/stop: | | X | | | |
| - Thunderstorm | X | X | | X* | |
| - Lightning | X | X | | X* | |
| - Tornado, waterspout, or funnel cloud | X | X | | X* | |
| - Hail | | X | | X* | |
| - Rain and snow mixed | | X | | X* | |
| - Freezing precipitation | | X | | X* | |
| - Blowing snow | | X | | X* | |
| - Drifting snow | | X | | X* | |
| - Sandstorm | | X | | X* | |
| - Ice pellets | | X | | X* | |
| - Squall (any sudden increase of at least 16 knots of mean wind speed with the increase in wind speed sustained at 22 knots or more for at least one minute) | | X | | | |

| | | | | | |
|--|--|---|---|--|---|
| before the speed diminishes). | | | | | |
| The condition of precipitation phenomena changes to be nothing or vice versa. | | X | | | |
| When a volcanic eruption is first noted or observed. | | X | | | |
| Nuclear Accident. When notified of a real world nuclear accident, JASDF will take and disseminate locally and longline a SPECI-1. The remark AEROB will be appended. | | X | | | |
| SPECI will be taken within 15-minutes after the weather technician returns to duty following a break in observing coverage or augmentation at the unit unless an observation is filed during that 15 minute period. | | X | | | |
| When the following weather phenomena changes in intensity (from weak or moderate to strong or more, or vice versa) | | | | | |
| - Thunderstorm | | X | | | |
| - Rain/snow mixed | | X | | | |
| - Freezing precipitation | | X | | | |
| - Hail | | X | | | |
| - Ice pellets | | X | | | |
| A layer of clouds or obscuring phenomena aloft is observed below the highest published instrument landing minimum (including circling) applicable to the airfield and no layer aloft was reported below this height in the previous METAR or SPECI. This is currently 600 feet. | | X | | | |
| Any other meteorological situation, which in the opinion of the observer is critical to the safety or efficiency of aircraft operations. | | X | | | |
| A layer of cloud increases from a scattered (no ceiling) condition to a broken or overcast condition, when no ceiling was previously reported.*** | | | X | | |
| Aircraft emergency, accident, or mishap | | | | | X |
| <p>Note 1: Runway Condition Reading (RCR): Base Operations will determine and disseminate RCR condition. It is not reported in the observation.</p> <p>Note 2: Location Identifiers: JASDF will disseminate observations for Misawa AB using the identifier RJSM.</p> <p>Note 3: 35 FW will accept 5000m as a substitute for 4800m/3SM and 2600m as a substitute for 2400m/1 1/2SM.</p> <p>Note 4: 35 FW will accept that the following required AFMAN 15-111 observations are not being taken.</p> <p>- Change in Runway. Following notification of a change in the runway in use, where the runway is dual-instrumented, weather sensors must be changed and allowed sufficient time to update with current information before taking the observation.</p> <p>- Altimeter Setting (ALSTG). LOCAL ALSTG observations are taken at an interval not to exceed 35 minutes when there has been a change of 0.01 inch Hg (0.3 hPa) or more since the last ALSTG value. A METAR or SPECI taken within the established time interval will meet this requirement, or the observation may be taken and disseminated as a single element LOCAL.</p> | | | | | |

- RVR for the active runway is observed to decrease to less than or, if below, increase to equal or exceed 6,000 feet (1830 meters)

- RVR is first determined as unavailable (RVRNO) for the runway in use, and when it is first determined that the RVRNO report is no longer applicable, provided conditions for reporting RVR exist.

Note 5: NOTE: USAF weather criteria dictates a SPECI be required for wind direction changes by 45 degrees or more in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift, however wind SPECI observations will be taken according to JASDF criteria stated above.

Note 6: Values for SPECI-1 may be added or changed on a temporary basis based upon runway and flight pattern conditions when specified by TERPS as a valid weather minimum for the airfield (per MOUI 3005). Changes will be published in the DoD Flight Information Publication. All communication of said changes will occur through the JASDF chain of command.

A2.1.3. Procedures: JASDF Wx:

A2.1.3.1. Takes and records observations IAW criteria outlined above.

A2.1.3.2. Disseminates observations locally to 35 OSS/OSW via JWS.

A2.1.3.3. Corporative weather watch does not exist between JASDF and USAF and therefore, according to the JASDF Rules of Aeronautical Meteorological Observation (RAMO), tower visibility is not required.

A2.2. Procedures should the weather observing tower be disabled or destroyed:

A2.2.1. The JASDF Weather Squadron will deploy weather observers to a mobile location on the southeast side of the ramp. Observers will take observations 24 hours daily and transmit them by radio or telephone to the JASDF weather office in the sector operations center/direction center (SOC/DC) if operations in building 998 are not possible.

A2.2.2. Because these observations most likely won't be taken using calibrated fixed meteorological equipment, all observed elements will be estimated. No RVR will be available.

Attachment 3

ADMINISTRATIVE MISSION EXECUTION FORECAST PROCESS

A3.1. Define Weather Thresholds

A3.1.1. Identify critical “Go/No-Go” terrestrial and space weather threshold values (i.e., airframe, mission types, weapon system, decision timelines)

A3.1.1.1. Typical endurance for this aircraft is 3 hours.

A3.1.1.2. Air refueling is possible, but usually not pre-planned for local flying, so diverting to distant bases is not usually an option.

A3.1.1.2.1. If used, visibility must be > 1NM.

A3.1.1.3. Minimum flying conditions are typically 300ft and/or 1 mile.

A3.1.1.3.1. CAT A pilots can operate at 200ft and ½ mile.

A3.1.1.4. Crosswinds

A3.1.1.4.1. Max crosswind component is 25 knots with a dry runway

A3.1.1.4.2. Max crosswind component is 23 knots with a wet runway

A3.1.1.5. Engine start-ups and extended periods on the ramp or taxiway must be monitored for inlet icing by maintenance personnel during potential Ice FOD conditions.

A3.1.1.6. On board radar was not designed to detect weather, but can be used in ground mode for severe weather detection.

A3.1.1.7. Low Level Wind Shear <2000 ft: Does not restrict operations. Advisory in nature to aircrews.

A3.1.1.8. Sustained winds of 35 knots or greater can cancel flying. This is the threshold for safe pilot aircraft ejection.

A3.1.1.9. Wind gusts 50 knots or greater: This threshold closes the flight line.

A3.1.1.10. Freezing Precipitation: Seriously degrades the mission. Freezing precipitation is associated with moderate to severe icing conditions.

A3.1.1.11. Observed Blizzard Conditions: Flying operations are nearly impossible due to sustained winds or gusts ≥ 30 knots, considerable falling and/or blowing snow, with prevailing visibility frequently $\leq \frac{1}{4}$ mile/0400 meters for a duration of ≥ 3 hours.

A3.1.1.12. Thunderstorms within 5-30nm: Assume that severe turbulence, icing, hail, low-level wind shear, and lightning in the vicinity of the storms.

A3.1.1.13. Lightning within 5nm: Restricts local traffic and refueling on the flight line. Lightning can strike the airfield any time there are thunderstorms within 10nm.

A3.1.1.14. Wind Chill Temperature of $< -25^{\circ}\text{F}$: Seriously impairs flight line operations.

A3.1.1.15. Winds $> 25\text{kt}$ and/or $> 10\text{ft}$ sea heights in the flying areas causes F16 pilots to remain within gliding distance of the land.

A3.1.1.16. Winds >35kt in the flying areas results in cancellation of missions in the flying areas.

A3.1.1.17. Space weather interferes with UHF radios. It does not prevent the sortie from launching.

A3.1.2. Mission limits

Table A3.1. Mission Types and Limitations.

| Mission | Definition | Working Areas | Weather Requirements |
|----------------------------|--|----------------------|---|
| ACM (Air to Air) | Advanced Combat Maneuvers (Visual: Dog Fighting) | MOAs | Ideally: 10k cloud-free block between 5k and 25k AGL Can work with 5K clear air Pilot does not need to see the ground. *Weather Requirements: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. |
| ACT/RED | Air Combat Tactics (same as ACM) | MOAs | 15k block of workable airspace would be ideal. Must have 10K for unlimited maneuvering. 5K is sufficient for limited maneuvering. Pilot does not need to see the ground. *Weather Requirements: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. |
| AHC (Air to Air) | Aircraft Handling Characteristics | MOAs | 10k block of clear airspace between 5k-25k. Pilot does not need to see the ground. |
| BSA | Basic Surface Attack | Draughton Range | HI EVENTS CIG Req'd 45 HARB: 21,600' 30 HARB: 17,600' 45 HADB: 16,200' 30 HADB: 11,900' 30 DB: 9,400' 30 DB(night): 9,800' LOW EVENTS CIG Req'd 20 HI: 7,300' 20 LALD: 5,900' 15 LALD: *4,300' 10 LALD: *3,600' 10 LAHD: *2,700' Vis LVL: *2,500' Strafe: *3,000' Pilot does need to see the ground. |
| BFM | Basic Flight Maneuvers (Visual: | MOAs | 10k cloud-free block between 5k and 20k AGL |

| | | | |
|------------------------------------|--|---|--|
| | Dog fighting) | | Pilot does not need to see the ground. *Weather Requirements: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. |
| CAS/XINT (Air to Ground) | Close Air Support/ Interdiction of Ground Forces | MOAs | 10k block of clear airspace between 5k-25k Pilot does need to see the ground. |
| DACT (Air to Air) | Defensive Air Combat Training | MOAs | 10k block of clear airspace between 5k-25k Pilot does not need to see the ground. *Weather Requirements: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. |
| DCA/OCA (Air to Air) | Defensive/Offensive Counter Air | MOAs | 10K block of workable airspace between 5k-30k Pilot does not need to see the ground *Weather Requirements: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. |
| DEAD | Destruction of Enemy Air Defense | Draughton Range | Ideally, clear below 25k', able to see the ground using Targeting Pod. Min required 5k' block between 10-30k' |
| DEMO | Demonstration Ride | MOAs | 2500/5 (low show) 7000/5 (high show) |
| FP (Air to Air) | Force Protection | MOAs | 10k block of airspace between any altitude from 5k to about 35k (again, that would be the top of the clear block) Pilot does not need to see the ground. |
| INST (Air to Air) | Instrument Sortie | Open Airspace | Pilot weather category. |
| LAO (Air to Air) | Local Area Orientation *Need viable alternate and range | MOAs | E Cat weather: 1500/3; however, if there is a pilot in the back seat, B Cat minimums is a go for this mission (300/1) |
| MI (Air to Ground) | Maritime Interdiction | MOAs | Working 5K and below. Ideal airspace clear SFC-050, 3-5 nm of visibility. Pilot does need to see the ground. |
| MAV (Air to Ground) | Dedicated Maverick Ride | MOAs, Draughton, C2, Off Range | *Weather requirements same as for BSA deliveries. Upgrade syllabus requires hi event minimums. Pilot does need to see the ground. |
| SAT/TST (Air to Ground) | Surface Attack Tactics /Time Sensitive Targeting (Bomb Drop Mission) | MOAs, Draughton Range | Workable airspace SFC-15k Pilot does need to see the ground. |
| SEAD | Suppression of | MOAs | 10k block of airspace between any altitude |

| | | | |
|---|---------------------|------|--|
| (Air to Air) | Enemy Air Defense | | from 5k to about 35k (again, that would be the top of the clear block) Pilot does not need to see the ground. |
| TGP (Air to Ground) | Targeting Pod | MOAs | Workable airspace SFC-30k Can be as low as SFC-10k' Pilot needs to see the ground. |
| TI (Air to Air) | Tactical Intercepts | MOAs | 5k block of clear airspace 5k-25k. Pilot does not need to see the ground. |
| NVG (Night Vision Goggle) | NVG Restrictions | All | Wx that can affect use: High illumination (scintillation and blinding), Lightning (same as high illumination), High relative humidity (degraded resolution), Cloud coverage (cannot see in clouds). The only requirement for NVG data is the 2.2 mlux value. |
| * Weather Requirements upon entering airspace: 2,000 feet vertical and 1 NM horizontal cloud clearance, 5 NM visibility and discernible horizon. This will be determined by the Aircrew upon entering the Airspace according to established procedures. | | | |

A3.1.3. Weapon systems are tied to Mission types. The flying schedule will list what the aircraft is carrying and what TAWS product to build.

A3.1.4. Decision Timelines

A3.1.4.1. WF personnel will work closely with the TOP 3 and SOF during periods of inclement weather to determine if the pilots should step to their aircraft.

A3.1.5. Identify critical resource protection thresholds (maintenance, security forces, logistics, emergency response)

A3.1.5.1. See WWA para from Chapter 8 “Resource Protection Services”

A3.1.6. Know where the parameters are applied (These airspace may change)

A3.1.6.1. C1 - C5 (Located on the west coast of Japan)

A3.1.6.2. Alpha (Located over Northern Hokkaido)

A3.1.6.3. B1 - B3 (normally joint flying with the Japanese Air Self-Defense Force).

A3.1.6.4. Draughon Range - Approximately 10 miles North of Misawa AB

A3.1.6.5. Gaicho – North, West, East and above Draughon Range

A3.1.6.6. Tango - Over and in the vicinity of Misawa

A3.1.7. Identify training requirements to ensure all assigned weather Airmen are able to mitigate mission-impacting environmental hazards.

A3.1.7.1. Training requirements are maintained within Air Force Training Records.

A3.1.7.1.1. This includes initial certification, AOL, Continuation and mobility training.

A3.2. Attain and Maintain Situational Awareness

A3.2.1. Identify logical process for obtaining situational awareness (SA) to identify trends and characterization of the atmosphere to others

A3.2.2. Leverage characterization products from DoD, U.S. Government (USG) and coalition sources. Utilize characterization products from academic or commercial sources only when suitable DoD, USG or coalition

A3.2.3. Determine best products to use (primary and back-up) for each step including purpose of the product utilized and the value to the MEFP.

A3.2.4. Include CU collaboration and communications.

A3.2.5. Include review of centrally and/or locally established C2 systems (i.e. unit flying schedule)

A3.3. Coordinate Operations

A3.3.1. Identify times, criteria and delivery format of environmental information for established supported units.

A3.3.1.1. Mass Brief: Due 1 hour prior to scheduled brief time

A3.3.1.2. SOFMEF:

A3.3.1.2.1. Posted 1 ½ hours before initial Take off, valid until 1 hour after last land.

A3.3.1.3. The Mass Brief and SOFMEF are saved to the WF SharePoint page and the Mass Brief on SIPR.

A3.3.1.4. All other WF products are disseminated to meet the needs of the customer.

A3.3.1.4.1. This can include email, SharePoint, CD or SIPR.

A3.3.1.5. Provide or arrange support for units when away from home station.

A3.3.1.5.1. WF personnel normally go TDY with the FS for ATRs in the PACAF AOR.

A3.3.1.5.2. If the FS is going to an established DoD installation, the WF will normally arrange for support from the local WF.

A3.3.1.6. Request special terrestrial, climatic and space weather products via SAR, if required.

A3.4. Mission verification/MISSIONWATCH

A3.4.1. Determine parameters, timelines and critical thresholds for MISSIONWATCH

A3.4.1.1. WF personnel will notify the SOF or TOP 3 as soon as possible when a criteria that was not forecasted to occur, will occur, or a forecasted criteria will not occur.

A3.4.1.2. An updated SOFMEF will be issued as soon as possible to reflect the change in conditions.

A3.4.2. Standardize mission/products utilized in order to report MWP Verification (MWPVER) in accordance with MAJCOM and AF guidance.

A3.4.2.1. The Misawa WF uses the MEF worksheet to provide MWP verification.

A3.4.2.1.1. The WF will use the initial SOFMEF for verifications as the Mass Brief is for planning use only.

Attachment 4

35 MXG WEATHER IMPACTS AND REQUIRED ACTIONS

A4.1. General. The following table identifies the specific impacts each WWA has on the 35th Maintenance Group (MXG) after each issuance and the customer's action.

Table A4.1. 35 MXG Impacts to Operations/Customer Actions.

| THRESHOLD | IMPACTS TO OPERATIONS | CUSTOMER ACTION |
|--|--|--|
| Lightning Watch within 5NM | Operations may continue | - Maintenance supervisors will ensure all personnel are prepared to implement lightning warning procedures without delay. |
| Lightning Warning Observed within 5NM | EOR crews will not de-arm aircraft. Aircraft will taxi to HAS parking area. Production Supervisors will receive MXG/CC or designated representative approval before exposing recovery crews. Production Supervisors will notify Fighter Squadron Top 3 of status affecting recovery. | - Maintenance supervisors will ensure personnel cease all outside activities and seek cover in an appropriate shelter, and immediately terminate: refuel/fuel operations, munitions movement, liquid oxygen servicing, and egress maintenance on aircraft. - Maintenance supervisors will ensure: all HAS doors are closed, all aircraft are grounded, all powered equipment sensitive to power surges are shut down, all aircraft canopies and radomes are closed. |
| Wind Warning \geq 50 knots | The F-16 nose radome may be opened and closed with a two-person team using extreme care with winds up to 57 knots. Opening the radome with winds in excess of 57 knots under any condition will result in serious injury to personnel or damage to aircraft or equipment. | - Do not open canopy, access doors, or panels when winds (observed) exceed 50 knots. - When winds are 50-69 knots, ensure the following: all steps in lower wind warning and advisory are complied with. All aircraft refueling operations are discontinued. All hangar and HAS doors are closed (open only to tow aircraft in). Winds greater than 70 knots: all aircraft are in a hangar or moored. |
| Wind Warning 35-49 kts | All outside weapons loading operations are discontinued. | - The F-16 nose radome shall not be opened by one person when exposed to winds (observed) in excess of 40 knots. |

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| Wind Advisory 25-34 kts | If winds are expected to exceed 30 knots, open canopy only as far as needed to enter/exit cockpit. Observed winds above 30 knots are capable of blowing a full open canopy past the full open position, causing the canopy hinges to disengage. | <ul style="list-style-type: none">- Aircraft shall not be jacked outside if winds are expected to exceed 30 knots; otherwise, injury to personnel and/or damage to the aircraft may occur.- All radomes, canopies, and panels are closed and secured on aircraft not sheltered or in a hangar. All aircraft chocks are installed and properly laced. |
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Attachment 5

WEATHER LIMITATIONS AND SENSITIVITIES ON CUSTOMERS

A5.1. General. The following tables identify impacts to 35 FW and Misawa AB agencies when Weather Watches, Warnings and Advisories are issued, and the customer's action.

Table A5.1. Weather Limitations and Sensitivities on Customers.

| MISAWA AB WEATHER WATCHES | DLT (in minutes) | IMPACTS TO OPERATIONS | CUSTOMER ACTIONS |
|---|-----------------------|--|--|
| Tornado | As potential warrants | Potential danger to personnel and resources | ALL: Personnel take protective action for vital equipment and seek shelter. |
| Severe Thunderstorm (Damaging winds ≥ 50 kts and/or Damaging Hail $\geq \frac{3}{4}$ inches) | As potential warrants | Possible structural damage to aircraft | MOC: Flight line personnel consider moving aircraft into hangars |
| | | | SOF: Consider declaring an alternate field |
| | | | ALL: Prepare to implement Peacetime Disaster Sheltering Checklist |
| Damaging Winds ≥ 50 kts (Not associated with Thunderstorms) | As potential warrants | Possible 50+ knots destructive winds and structural damage to aircraft | ALL: Prepare to implement Peacetime Disaster Sheltering Checklist |
| Heavy Snow ($\geq 8"$ in 12 hours) | As potential warrants | Possibly affect roads and RCR | CES: Prepare to spin up snow removal operations |
| | | Possible interruption of communication and power nets | CS: On standby to take protective action |
| Freezing Precipitation (Any Intensity) | As potential warrants | Possibly affects roads and RCR | CES: Horizontal teams prepare to spin up de-icing operations |
| | | F-16's will not operate in severe icing conditions | SOF: Considers declaring an alternate airfield |

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| | | Possibly prevent concrete hydration or curing and cause structural damage | USACE: Reschedule concrete operations |
| Heavy Rain ($\geq 2''$ in 12 hours) | As potential warrants | Possible flooding base wide | CES: Considers placing sandbags outside work centers. Notifies Facility Managers to place sandbags outside of work centers |
| | | | FSS: Considers taking applicable actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assets |
| Blizzard Conditions (Duration ≥ 3 hrs, wind or gusts ≥ 30 kts, falling and/or blowing snow with visibility $\leq \frac{1}{4}$ mile visibility/0400 meters) | As potential warrants | Potentially affects roads and RCR | CES: Spin up snow removal operations |
| | | Non-mission essential personnel | CP: Notifies base populace of which personnel should report for duty |
| Lightning within 5 NM | 30 | Possible damage to base facilities, computer infrastructure, and serious injury to personnel | ALL: Consider taking protective measures |
| | | No impact. Flight line operations may continue | MOC: Ensure all personnel are prepared to implement lightning warning procedures without delay |
| MISAWA AB WEATHER WARNINGS | DLT (in minutes) | IMPACTS TO OPERATIONS | CUSTOMER ACTIONS |
| Tornado | 30 | Grave danger to personnel and resources on flight line | MOC: Operations cease and personnel take protective action |
| Severe Thunderstorms (Damaging Winds) | 120 | The F-16 nose radome may be opened and closed with a two-person team using extreme care with winds up | MOC: Do not open canopy, access doors, or panels when winds (observed) exceed 50 |

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| <p>≥50 kts and/or Damaging Hail ≥ ¾ inches)</p> | | <p>to 57 knots. Opening the radome with winds in excess of 57 knots under any condition will result in serious injury to personnel or damage to aircraft or equipment.</p> <p>Structural damage to aircraft.</p> | <p>knots. When winds are 50-69 knots, ensure all steps in lower wind warning and advisory are complied with. All aircraft refueling operations are discontinued. All hangar and HAS doors are closed (open only to tow aircraft in). Winds greater than 70 knots: all aircraft are inside a hangar or moored.</p> <p>Aircraft moved to a hangar.</p> |
| | | Danger to SFs in watch towers | SFS: Evacuate watch towers |
| | | Antennae assets may be damaged during high winds | MSOC: If sustained winds of 35-49 knots are occurring, activate RAT (reconnaissance assessment team) to ensure outside equipment is secured and tied down. If sustained winds of 50 knots or greater, then notify job control to rotate all moveable antennae into the wind even if they have mission on them. |
| | | <p>Contractors operating cranes, movement of heavy loads</p> <p>Damage to engineering projects.</p> | <p>USACE: Will notify contractors to take protective actions</p> <p>USACE: Notifies contractors</p> |

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| | | Possible interruption of various communication and power nets | CS: On standby to take protective action |
| | | Possible damage to Gov't vehicles and employees | AMC CATO & LRS/LGRDDO: shelter vehicles and employees |
| | | Personnel outdoors will be injured due to hail stones if not warned | FSS: Take actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assests. |
| Moderate Thunderstorm (High Winds 35-49 kts and/or Large Hail <3/4 inches) | 90 | Aircraft subject to damage from blowing objects | MOC: Aircraft tied down within a hangar or evacuated |
| | | Injury to personnel and/or damage to the aircraft may occur | The F-16 nose radome shall not be opened by one person when exposed to winds (observed) in excess of 40 knots. All outside weapons loading operations are discontinued |
| | | Possible loss of commercial power | MSOC: Switch over to generator power to prevent any undue power loss to continue ops |
| | | Possible damage to base facilities from blowing objects | CES/SFS: Personnel will spot check base locations |
| Damaging Winds ≥50 kts (Not associated with Thunderstorms) | 120 | Hazard to aircrew from being dragged by parachute after ejecting | SOF: Consider ceasing flying ops Consider declaring an alternate runway in an area not being affected by high winds |
| | | The F-16 nose radome may be opened and closed with a two-person team using extreme care with winds up to 57 knots. Opening the radome with winds in excess of 57 knots under | MOC: Do not open canopy, access doors, or panels when winds (observed) exceed 50 knots. When winds are 50-69 knots, ensure all steps in lower wind |

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| | | any condition will result in serious injury to personnel or damage to aircraft or equipment. | warning and advisory are complied with. All aircraft refueling operations are discontinued. All hangar and HAS doors are closed (open only to tow aircraft in). Winds greater than 70 knots: all aircraft are inside a hangar or moored. |
| | | Danger to SFs in watch towers | SFS: evacuate watch towers |
| | | Antennae assets may be damaged during high winds | MSOC: If sustained winds of 35-49 knots are occurring, activate RAT (reconnaissance assessment team) to ensure outside equipment is secured and tied down. If sustained winds of 50 knots or greater, then notify job control to rotate all moveable antennae into the wind even if they have mission on them. |
| | | Contractors operating cranes, movement of heavy loads from cables & slings are affected by high winds | USACE: Will notify contractors to take protective actions |
| Strong Winds 35-49 kts (Not associated with Thunderstorms) | 90 | Aircraft subject to damage from blowing objects Injury to personnel and/or damage to the aircraft may occur | MOC: Aircraft tied down within a hangar or evacuated The F-16 nose radome shall not be opened by one person when exposed to winds (observed) in excess of 40 knots. All outside weapons loading operations are discontinued |

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| | | Possible loss of commercial power | MSOC: Switch power to generator to prevent undue power loss to continue ops |
| | | Possible damage to base facilities from blowing objects | CE & SFS: Personnel will spot check base locations |
| | | Hazard to aircrew from being dragged by parachute after ejecting | SOF: Consider ceasing flying ops. Consider declaring alternate runway in an area not being affected by high winds. |
| Heavy Snow (≥8" in 12 hours) | 90 | Degrades roads and RCR | CES: Recalls and activates Snow Removal trucks and drivers |
| | | Outdoor folks may be stranded in snow and require rescue | FSS: Take applicable actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assets |
| | | Possible interruption of comm and power nets | CS: Take protective action |
| Freezing Precipitation (Any Intensity) | 90 | Flight operations adversely affected by icing | MOC: Flight operations cease |
| | | Damage to comm and power nets | CS: Take protective action |
| | | Icy roads/taxiways | CES: Spins up ice melting operation |
| Heavy Rain (≥2" in 12 hrs) | 90 | Possible flooding base wide | CES: Considers placing sandbags outside work centers. CE notifies Facility Managers to place sandbags outside of work centers. |
| | | | FSS: Considers taking applicable actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assets |

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| Blizzard Conditions (Duration ≥3 hrs, wind or gusts ≥30 kts, falling and/or blowing snow with visibility ≤¼ mile visibility/0400 meters) | 90 | Structural damage to aircraft | MOC: Aircraft moved within a hangar |
| | | Traveling is potentially dangerous if personnel / vehicle become disoriented and stranded | CP: Notifies base populace of which personnel should report for duty. All non-mission essential personnel stay home |
| Lightning within 5 NM | Observed | Potential damage to base facilities, computer stored data, and injury to personnel | ALL: Take immediate protective actions |
| | | Potential for catastrophic injury or damage. Anything combustible or explosive in nature (jet fuel, munitions, liquid OX and egress systems) can be struck by lightning and start a fire (or explosion) | AMC CATO & CP: Notify flight line personnel. MOC: Supervisors will ensure all HAS doors are closed, all aircraft are grounded, all powered equipment sensitive to power surges are shut down, all aircraft canopies and radomes are closed |
| | | | MOC: Cease all outside activities and seek cover in an appropriate shelter, and immediately terminate: refuel/fuel operations, munitions movement, liquid oxygen servicing, and egress system maintenance |
| | | | MOMAD: At the approach of and during an electrical storm, closed magazines containing ammunition and explosives shall not be opened. If work is being performed in the magazine or open storage site, the work shall stop and equipment shall be safely secured. The |

| | | | magazine shall be closed and locked, and personnel shall be evacuated to a safe distance ASAP. |
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| | | | EOR: Crews will not de-arm aircraft. Aircraft will taxi to HAS parking area. Production Supervisors will receive MXG/CC or designated representative approval before exposing recovery crews. Production Supervisors will notify Fighter Squadron Top 3 of status affecting recovery |
| | | | MSOC: request generator power through Job Control |
| | | | FSS: Take applicable actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assets. |
| MISAWA AB WEATHER ADVISORIES | DLT (in minutes) | IMPACTS TO OPERATIONS | CUSTOMER ACTIONS |
| Surface Winds 25-34 kts | 30 | 30 knots is the limits for jacking F-16 aircraft. Open canopy can act as 3rd wing and lift F-16 out of its chocks with winds above 25 knots. Observed winds above 30 knots can blow canopy past the full open position, causing the canopy hinges to disengage resulting in aircraft damage and personnel injury | MXG will not jack F-16 outside if winds are expected to exceed 30 knots. All radomes, canopies and panels are closed and secured on aircraft not sheltered or in a hangar. All chocks installed and properly laced. Open canopy only as far as needed to enter/exit cockpit |

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| | | Danger to refueling operations | POL prepares to stop refueling; moves operations inside (30 knots observed) |
| | | Danger to communication antennas, roofing, scaffolding, and similar construction | CES and CS personnel secure loose equipment |
| Crosswind 15-19 kts | Observed | Formation takeoff max Crosswind is 15 knots. | SOF declares alternate airfield |
| Crosswind 20-25 kts | Observed | Wet runway crosswind limit for F-16 is exceeded when Crosswinds are > 23 knots | SOF declares alternate airfield |
| Crosswind 26-34 kts | Observed | Exceeds F-16 Crosswind Limit (26 knots on DRY runway) | SOF declares alternate airfield |
| Crosswind ≥ 35 kts | Observed | Exceeds P-3 Crosswind Limit | Cancel Flying |
| Ice FOD | Observed | Possible F-16 engine damage | MOC : Precautionary measures taken |
| Lightning 5-30 NM | Observed | Potential for catastrophic injury or damage due to wayward lightning strikes | MOC : Restricts local traffic & refueling on flight line |
| | | People outside are particularly vulnerable to lightning strikes, along with any outdoor equipments | FSS will take applicable actions, in a timely manner, to safeguard people engaged in outdoor activities and to protect any vulnerable assets |
| | | Contractors operating cranes, excavators have extended reaches which might attract lightning | USACE (U.S. Army Corp of Engineers) will notify contractors to take protective action |
| Low-Level Wind Shear below 2000ft AGL | Observed | Expect moderate or greater turbulence not associated with thunderstorms | OSW : Advisory in nature to aircrews; does not restrict operations |

Attachment 6

TROPICAL CYCLONE CONDITIONS OF READINESS (TCCOR) CRITERIA AND DESTRUCTIVE WINDS

Figure A6.1. TCCOR Criteria and Destructive Winds.

| CONDITION | DEFINITION |
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| Storm Watch | Strong winds of 35 knots sustained or greater are possible due to the proximity of a tropical cyclone; however, winds are not forecast to meet the destructive wind criteria. Strong winds will meet TCCOR 1 Caution criteria. The storm is also close enough to the area that a heightened alert status is necessary in order to rapidly establish elevated TCCOR conditions should the storm deviate from the forecast track or intensity. |
| 5 | Destructive winds are <i>possible</i> within 96 hours. |
| 4 | Destructive winds are <i>possible</i> within 72 hours. |
| 3 | Destructive winds are <i>possible</i> within 48 hours. |
| 2 | Destructive winds <i>anticipated</i> within 24 hours. |
| 1 | Destructive winds <i>anticipated</i> within 12 hours. |
| 1 Caution* | Winds of 35-49 knots sustained are occurring on the installation. |
| 1 Emergency* | Winds 50 knots sustained or greater are occurring on the installation. |
| 1 Recovery* | After the passage of a TC when destructive winds have subsided, work and survey crews are sent out to determine the extent of damage and to establish safe zones around hazards. Until the recovery process is declared complete (TCCOR All Clear), the general base population would normally be asked to remain indoors. |
| All Clear* | The storm is over and not forecast to return and recovery efforts are considered complete by the installation commander. |
| Destructive winds are defined as ≥ 50 knots (58 mph) sustained and/or gusts of 60 knots (69 mph). | |
| <p>* Note 1: TCCOR 1 Caution/Emergency/Recovery/All Clear is delegated to the Installation Commander by the TCCOR Authority. For Misawa AB, Draughon Range, Hachinohe POL Port, and Shariki Communications Site, the TCCOR Authority is the 35 FW/CC.</p> <p>Note 2: WWAs will be issued until Misawa AB is directed to implement TCCOR 1. TCCOR 1 assumes all WWAs (i.e. Heavy Rain, Moderate and/or Severe Winds, Lightning, Tornadoes) are considered possible. At that point no WWAs are required to be issued due to the nature of TCCOR. This will be in effect until Misawa AB is directed to implement TCCOR Storm Clear or All Clear whichever comes first. At that point any WWAs warranting issuance can/will be issued.</p> | |